

36571037
SEQUENCE LISTING

<110> CHRISTENSEN, GEIR
ANDERSSON, KRISTIN BREVIK

<120> NON-HUMAN MAMMAL COMPRISING A MODIFIED SERCA2 GENE AND
METHODS, CELLS, GENES, AND VECTORS THEREOF

<130> 3657-1037

<140> 10/585,077

<141> 2006-06-29

<150> PCT/NO04/000397

<151> 2004-12-22

<150> 60/533,740

<151> 2003-12-30

<160> 32

<170> PatentIn Ver. 3.3

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<211> 801

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
nucleotide construct

<400> 1

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accgggtcc acctcgtggg gcttggctcg gcgcggcgcc cgacggctgc gagaggccgg 180
cggtcacgc gcgggtcttg gccatcgccg accttagggg tctcgaatca agcttatcga 240
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gtccctcgac ctgcagccca agctccgggg atctcgagcc ggtgaccttc ccggccggcg 420
ctcagcgagt cggattgggg gggggggaga gggagtggga aggaggagg aggttcctgc 480
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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
nucleotide construct

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gtttaagtct gaccagggg gatccggaac ccttaatata acttcgtata atgtatgcta 180
tacgaagtta ttaggtccct cgacctgcag cccaagctga tcctctagtc gagccccagc 240
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tactcagaca	atgcgatgca	atttcctcat	tttattagga	aaggacagtg	ggagtggcac	420
cttccagggt	caaggaaggc	acgggggagg	ggcaaacaac	agatggctgg	caactagaag	480
gcacagtcga	ggctgatcag	cgagctctag	ctagagaatt	gatccccctca	gaagaactcg	540
tcaagaaggc	gatagaaggc	gatgcgctgc	gaatcgggag	cggcgatccg	taaagcacga	600
ggaagcggca	gcccattcgc	cgccaagctc	tttcagcaat	atcacgggta	gccaacgcta	660
tgtctgataa	gcggtccgcc	cacacccaac	cggccacaag	tcatgaaatc	caaaaaagcg	720
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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic nucleotide construct

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cgtagacgat	atcgctcgcg	gaaccagagg	ccaccagcaa	gttgctgtgtg	gggtggttttc	180
cccattccgtg	gggacgtcta	tataaaccgc	agtagcgtgg	gcatttttctg	ctccggggcgg	240
acttccgtgg	cttcttgctg	ccggcgaggg	cgcaacgccc	tacgtcggtt	gctatggccg	300
cgagaacgcg	cagcctggtc	gaacgcagac	gcgtgttgat	ggccggggta	cgaagccata	360
cgcgcttcta	caaggcgctg	gccgaagagg	tgcgggagtt	tcacgccacc	aagatctgcg	420
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gcgtcacctt	aatatgcgaa	gtggacctcg	gaccgcgccg	ccccgactgc	atctgcgtgt	540
tcgaattcgc	caatgacaag	acgctgggcg	gggtttgctc	gacattgggt	ggaaacattc	600
caggcctggg	tggagaggct	ttttgcttcc	tcttgcaaaa	ccacactgct	cgacattggg	660
tggaaacatt	ccaggcctgg	gtggagaggc	tttttgcttc	ctcttgaaaa	ccacactgct	720
cgatccggaa	cccttaatat	aacttcgtat	aatgtatgct	atacgaagtt	attaggtccc	780
tcgacctgca	gccaagctg	atcctctaga	gtcgacctcg	atctgtgggtc	atggcctcta	840
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<210> 4

<211> 34

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic oligonucleotide

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic primer

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 <223> Description of Artificial Sequence: Synthetic primer

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<210> 8
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 <212> DNA
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<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 8
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<210> 9
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<400> 11
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<210> 12
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primer

<400> 12
aggctcctcg aactctccag 20

<210> 13
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primer

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<210> 14
<211> 994
<212> PRT
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35 40 45
Leu Trp Glu Leu Val Val Glu Gln Phe Glu Asp Leu Leu Val Arg Ile
50 55 60
Leu Leu Leu Ala Ala Cys Ile Ser Phe Val Leu Ala Trp Phe Glu Glu
65 70 75 80

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Gly Glu Glu Thr Val₈₅ Thr Ala Phe Val₉₀ Glu Pro Phe Val Ile Leu₉₅ Leu
 Ile Leu Ile Ala₁₀₀ Asn Ala Ile Val₁₀₅ Gly Val Trp Gln Glu Arg Asn Ala₁₁₀
 Glu Asn Ala₁₁₅ Ile Glu Ala Leu₁₂₀ Lys Glu Tyr Glu Pro Glu₁₂₅ Met Gly Lys
 Val Tyr₁₃₀ Arg Ala Asp Arg Lys₁₃₅ Ser Val Gln Arg Ile₁₄₀ Lys Ala Arg Asp
 Ile₁₄₅ Val Pro Gly Asp Ile₁₅₀ Val Glu Val Ala₁₅₅ Gly Asp Lys Val Pro₁₆₀
 Ala Asp Ile Arg Ile₁₆₅ Leu Ser Ile Lys Ser₁₇₀ Thr Thr Leu Arg Val₁₇₅ Asp
 Gln Ser Ile Leu₁₈₀ Thr Gly Glu Ser Val₁₈₅ Ser Val Ile Lys His₁₉₀ Thr Asp
 Pro Val Pro₁₉₅ Asp Pro Arg Ala Val₂₀₀ Asn Gln Asp Lys Lys₂₀₅ Asn Met Leu
 Phe Ser Gly Thr Asn Ile Ala₂₁₅ Ala Gly Lys Ala Val₂₂₀ Gly Ile Val Ala
 Thr₂₂₅ Thr Gly Val Ser Thr₂₃₀ Glu Ile Gly Lys Ile₂₃₅ Arg Asp Gln Met Ala₂₄₀
 Ala Thr Glu Gln Asp₂₄₅ Lys Thr Pro Leu Gln₂₅₀ Gln Lys Leu Asp Glu₂₅₅ Phe
 Gly Glu Gln Leu₂₆₀ Ser Lys Val Ile Ser₂₆₅ Leu Ile Cys Val Ala₂₇₀ Val Trp
 Leu Ile Asn₂₇₅ Ile Gly His Phe Asn₂₈₀ Asp Pro Val His Gly₂₈₅ Gly Ser Trp
 Phe Arg₂₉₀ Gly Ala Ile Tyr Tyr₂₉₅ Phe Lys Ile Ala Val₃₀₀ Ala Leu Ala Val
 Ala₃₀₅ Ala Ile Pro Glu Gly₃₁₀ Leu Pro Ala Val Ile₃₁₅ Thr Thr Cys Leu Ala₃₂₀
 Leu Gly Thr Arg Arg₃₂₅ Met Ala Lys Lys Asn₃₃₀ Ala Ile Val Arg Ser₃₃₅ Leu
 Pro Ser Val Glu₃₄₀ Thr Leu Gly Cys Thr₃₄₅ Ser Val Ile Cys Ser₃₅₀ Asp Lys
 Thr Gly Thr₃₅₅ Leu Thr Thr Asn Gln₃₆₀ Met Ser Val Cys Lys₃₆₅ Met Phe Ile
 Ile Asp₃₇₀ Lys Val Asp Gly Asp₃₇₅ Val Cys Ser Leu Asn₃₈₀ Glu Phe Ser Ile
 Thr₃₈₅ Gly Ser Thr Tyr Ala₃₉₀ Pro Glu Gly Glu Val₃₉₅ Leu Lys Asn Asp Lys₄₀₀
 Pro Val Arg Ala Gly₄₀₅ Gln Tyr Asp Gly Leu₄₁₀ Val Glu Leu Ala Thr₄₁₅ Ile

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Val	Tyr	Glu 435	Lys	Val	Gly	Glu	Ala 440	Thr	Glu	Thr	Ala	Leu 445	Thr	Thr	Leu	
Val	Glu 450	Lys	Met	Asn	Val	Phe 455	Asn	Thr	Glu	Val	Arg 460	Ser	Leu	Ser	Lys	
Val 465	Glu	Arg	Ala	Asn	Ala 470	Cys	Asn	Ser	Val	Ile 475	Arg	Gln	Leu	Met	Lys 480	
Lys	Glu	Phe	Thr	Leu 485	Glu	Phe	Ser	Arg	Asp 490	Arg	Lys	Ser	Met	Ser 495	Val	
Tyr	Cys	Ser	Pro 500	Ala	Lys	Ser	Ser	Arg 505	Ala	Ala	Val	Gly	Asn 510	Lys	Met	
Phe	Val	Lys 515	Gly	Ala	Pro	Glu	Gly 520	Val	Ile	Asp	Arg	Cys 525	Asn	Tyr	Val	
Arg	Val 530	Gly	Thr	Thr	Arg	Val 535	Pro	Leu	Thr	Gly	Pro 540	Val	Lys	Glu	Lys	
Ile 545	Met	Ser	Val	Ile	Lys 550	Glu	Trp	Gly	Thr	Gly 555	Arg	Asp	Thr	Leu	Arg 560	
Cys	Leu	Ala	Leu	Ala 565	Thr	Arg	Asp	Thr	Pro 570	Pro	Lys	Arg	Glu	Glu 575	Met	
Val	Leu	Asp	Asp 580	Ser	Ala	Lys	Phe	Met 585	Glu	Tyr	Glu	Met	Asp 590	Leu	Thr	
Phe	Val	Gly 595	Val	Val	Gly	Met	Leu 600	Asp	Pro	Pro	Arg	Lys 605	Glu	Val	Thr	
Gly 610	Ser	Ile	Gln	Leu	Cys	Arg 615	Asp	Ala	Gly	Ile	Arg 620	Val	Ile	Met	Ile	
Thr 625	Gly	Asp	Asn	Lys	Gly 630	Thr	Ala	Ile	Ala	Ile 635	Cys	Arg	Arg	Ile	Gly 640	
Ile	Phe	Ser	Glu	Asn 645	Glu	Glu	Val	Thr	Asp 650	Arg	Ala	Tyr	Thr	Gly 655	Arg	
Glu	Phe	Asp	Asp 660	Leu	Pro	Leu	Ala	Glu 665	Gln	Arg	Glu	Ala	Cys 670	Arg	Arg	
Ala	Cys	Cys 675	Phe	Ala	Arg	Val	Glu 680	Pro	Ser	His	Lys	Ser 685	Lys	Ile	Val	
Glu	Tyr 690	Leu	Gln	Ser	Tyr	Asp 695	Glu	Ile	Thr	Ala	Met 700	Thr	Gly	Asp	Gly	
Val 705	Asn	Asp	Ala	Pro	Ala 710	Leu	Lys	Lys	Ala	Glu 715	Ile	Gly	Ile	Ala	Met 720	
Gly	Ser	Gly	Thr	Ala 725	Val	Ala	Lys	Thr	Ala 730	Ser	Glu	Met	Val	Leu 735	Ala	
Asp	Asp	Asn	Phe 740	Ser	Thr	Ile	Val	Ala 745	Ala	Val	Glu	Glu	Gly 750	Arg	Ala	

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755 760 765
Val Gly Glu Val Val Cys Ile Phe Leu Thr Ala Ala Leu Gly Leu Pro
770 775 780
Glu Ala Leu Ile Pro Val Gln Leu Leu Trp Val Asn Leu Val Thr Asp
785 790 795 800
Gly Leu Pro Ala Thr Ala Leu Gly Phe Asn Pro Pro Asp Leu Asp Ile
805 810 815
Met Asp Arg Pro Pro Arg Ser Pro Lys Glu Pro Leu Ile Ser Gly Trp
820 825 830
Leu Phe Phe Arg Tyr Met Ala Ile Gly Gly Tyr Val Gly Ala Ala Thr
835 840 845
Val Gly Ala Ala Ala Trp Trp Phe Leu Tyr Ala Glu Asp Gly Pro His
850 855 860
Val Ser Tyr His Gln Leu Thr His Phe Met Gln Cys Thr Glu His Asn
865 870 875 880
Pro Glu Phe Asp Gly Leu Asp Cys Glu Val Phe Glu Ala Pro Glu Pro
885 890 895
Met Thr Met Ala Leu Ser Val Leu Val Thr Ile Glu Met Cys Asn Ala
900 905 910
Leu Asn Ser Leu Ser Glu Asn Gln Ser Leu Leu Arg Met Pro Pro Trp
915 920 925
Val Asn Ile Trp Leu Leu Gly Ser Ile Cys Leu Ser Met Ser Leu His
930 935 940
Phe Leu Ile Leu Tyr Val Asp Pro Leu Pro Met Ile Phe Lys Leu Arg
945 950 955 960
Ala Leu Asp Phe Thr Gln Trp Leu Met Val Leu Lys Ile Ser Leu Pro
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Val Ile Gly Leu Asp Glu Leu Leu Lys Phe Ile Ala Arg Asn Tyr Leu
980 985 990
Glu Gly

<210> 15
<211> 998
<212> PRT
<213> Mus musculus

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20 25 30
Lys Glu Arg Trp Gly Ser Asn Glu Leu Pro Ala Glu Glu Gly Lys Thr

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Gly	Glu	Glu	Thr	Ile	Thr	Ala	Phe	Val	Glu	Pro	Phe	Val	Ile	Leu	Leu
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Ile	Leu	Val	Ala	Asn	Ala	Ile	Val	Gly	Val	Trp	Gln	Glu	Arg	Asn	Ala
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Glu	Asn	Ala	Ile	Glu	Ala	Leu	Lys	Glu	Tyr	Glu	Pro	Glu	Met	Gly	Lys
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Gln	Ser	Ile	Leu	Thr	Gly	Glu	Ser	Val	Ser	Val	Ile	Lys	His	Thr	Asp
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Pro	Val	Pro	Asp	Pro	Arg	Ala	Val	Asn	Gln	Asp	Lys	Lys	Asn	Met	Leu
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Phe	Ser	Gly	Thr	Asn	Ile	Ala	Ala	Gly	Lys	Ala	Met	Gly	Val	Val	Val
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Ala	Thr	Glu	Gln	Glu	Arg	Thr	Pro	Leu	Gln	Gln	Lys	Leu	Asp	Glu	Phe
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Gly	Glu	Gln	Leu	Ser	Lys	Val	Ile	Ser	Leu	Ile	Cys	Ile	Ala	Val	Trp
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Ala	Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ala	Val	Ile	Thr	Thr	Cys	Leu	Ala
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370 375 36571037 380
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 Pro Val Lys Cys His Gln Tyr Asp Gly Leu Val Glu Leu Ala Thr Ile
 405 410 415
 Cys Ala Leu Cys Asn Asp Ser Ala Leu Asp Tyr Asn Glu Ala Lys Gly
 420 425 430
 Val Tyr Glu Lys Val Gly Glu Ala Thr Glu Thr Ala Leu Thr Cys Leu
 435 440 445
 Val Glu Lys Met Asn Val Phe Asp Thr Glu Leu Lys Gly Leu Ser Lys
 450 455 460
 Ile Glu Arg Ala Asn Ala Cys Asn Ser Val Ile Lys Gln Leu Met Lys
 465 470 475 480
 Lys Glu Phe Thr Leu Glu Phe Ser Arg Asp Arg Lys Ser Met Ser Val
 485 490 495
 Tyr Cys Thr Pro Asn Lys Pro Ser Arg Thr Ser Met Ser Lys Met Phe
 500 505 510
 Val Lys Gly Ala Pro Glu Gly Val Ile Asp Arg Cys Thr His Ile Arg
 515 520 525
 Val Gly Ser Thr Lys Val Pro Met Thr Pro Gly Val Lys Gln Lys Ile
 530 535 540
 Met Ser Val Ile Arg Glu Trp Gly Ser Gly Ser Asp Thr Leu Arg Cys
 545 550 555 560
 Leu Ala Leu Ala Thr His Asp Asn Pro Leu Lys Arg Glu Glu Met His
 565 570 575
 Leu Glu Asp Ser Ala Asn Phe Ile Lys Tyr Glu Thr Asn Leu Thr Phe
 580 585 590
 Val Gly Cys Val Gly Met Leu Asp Pro Pro Arg Ile Glu Val Ala Ser
 595 600 605
 Ser Val Lys Leu Cys Arg Gln Ala Gly Ile Arg Val Ile Met Ile Thr
 610 615 620
 Gly Asp Asn Lys Gly Thr Ala Val Ala Ile Cys Arg Arg Ile Gly Ile
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 Phe Gly Gln Asp Glu Asp Val Thr Ser Lys Ala Phe Thr Gly Arg Glu
 645 650 655
 Phe Asp Glu Leu Ser Pro Ser Ala Gln Arg Asp Ala Cys Leu Asn Ala
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 Arg Cys Phe Ala Arg Val Glu Pro Ser His Lys Ser Lys Ile Val Glu
 675 680 685
 Phe Leu Gln Ser Phe Asp Glu Ile Thr Ala Met Thr Gly Asp Gly Val
 690 695 700
 Asn Asp Ala Pro Ala Leu Lys Lys Ser Glu Ile Gly Ile Ala Met Gly

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 Ser Gly Thr Ala Val Ala Lys Thr Ala Ser Glu Met Val Leu Ala Asp
 725 730 735
 Asp Asn Phe Ser Thr Ile Val Ala Ala Val Glu Glu Gly Arg Ala Ile
 740 745 750
 Tyr Asn Asn Met Lys Gln Phe Ile Arg Tyr Leu Ile Ser Ser Asn Val
 755 760 765
 Gly Glu Val Val Cys Ile Phe Leu Thr Ala Ala Leu Gly Phe Pro Glu
 770 775 780
 Ala Leu Ile Pro Val Gln Leu Leu Trp Val Asn Leu Val Thr Asp Gly
 785 790 795 800
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 Asn Lys Pro Pro Arg Asn Pro Lys Glu Pro Leu Ile Ser Gly Trp Leu
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 Phe Phe Arg Tyr Leu Ala Ile Gly Cys Tyr Val Gly Ala Ala Thr Val
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 850 855 860
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 Asp Phe Asp Gly Val Asp Cys Ala Ile Phe Glu Ser Pro Tyr Pro Met
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 Thr Met Ala Leu Ser Val Leu Val Thr Ile Glu Met Cys Asn Ala Leu
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<210> 16
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<400> 16

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Pro	Val	Pro	Asp	Pro	Arg	Ala	Val	Asn	Gln	Asp	Lys	Lys	Asn	Met	Leu
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Phe	Ser	Gly	Thr	Asn	Ile	Ala	Ala	Gly	Lys	Ala	Met	Gly	Val	Val	Val
	210					215					220				
Ala	Thr	Gly	Val	Asn	Thr	Glu	Ile	Gly	Lys	Ile	Arg	Asp	Glu	Met	Val
225					230					235					240
Ala	Thr	Glu	Gln	Glu	Arg	Thr	Pro	Leu	Gln	Gln	Lys	Leu	Asp	Glu	Phe
			245						250					255	
Gly	Glu	Gln	Leu	Ser	Lys	Val	Ile	Ser	Leu	Ile	Cys	Ile	Ala	Val	Trp
			260					265					270		
Ile	Ile	Asn	Ile	Gly	His	Phe	Asn	Asp	Pro	Val	His	Gly	Gly	Ser	Trp
		275					280					285			
Ile	Arg	Gly	Ala	Ile	Tyr	Tyr	Phe	Lys	Ile	Ala	Val	Ala	Leu	Ala	Val
	290					295					300				
Ala	Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ala	Val	Ile	Thr	Thr	Cys	Leu	Ala
305					310					315					320
Leu	Gly	Thr	Arg	Arg	Met	Ala	Lys	Lys	Asn	Ala	Ile	Val	Arg	Ser	Leu
				325					330					335	

36571037
 Pro Ser Val Glu Thr Leu Gly Cys Thr Ser Val Ile Cys Ser Asp Lys
 340 345 350
 Thr Gly Thr Leu Thr Thr Asn Gln Met Ser Val Cys Arg Met Phe Ile
 355 360 365
 Leu Asp Lys Val Glu Gly Asp Thr Cys Ser Leu Asn Glu Phe Ser Ile
 370 375 380
 Thr Gly Ser Thr Tyr Ala Pro Ile Gly Glu Val Gln Lys Asp Asp Lys
 385 390 395 400
 Pro Val Lys Cys His Gln Tyr Asp Gly Leu Val Glu Leu Ala Thr Ile
 405 410 415
 Cys Ala Leu Cys Asn Asp Ser Ala Leu Asp Tyr Asn Glu Ala Lys Gly
 420 425 430
 Val Tyr Glu Lys Val Gly Glu Ala Thr Glu Thr Ala Leu Thr Cys Leu
 435 440 445
 Val Glu Lys Met Asn Val Phe Asp Thr Glu Leu Lys Gly Leu Ser Lys
 450 455 460
 Ile Glu Arg Ala Asn Ala Cys Asn Ser Val Ile Lys Gln Leu Met Lys
 465 470 475 480
 Lys Glu Phe Thr Leu Glu Phe Ser Arg Asp Arg Lys Ser Met Ser Val
 485 490 495
 Tyr Cys Thr Pro Asn Lys Pro Ser Arg Thr Ser Met Ser Lys Met Phe
 500 505 510
 Val Lys Gly Ala Pro Glu Gly Val Ile Asp Arg Cys Thr His Ile Arg
 515 520 525
 Val Gly Ser Thr Lys Val Pro Met Thr Pro Gly Val Lys Gln Lys Ile
 530 535 540
 Met Ser Val Ile Arg Glu Trp Gly Ser Gly Ser Asp Thr Leu Arg Cys
 545 550 555 560
 Leu Ala Leu Ala Thr His Asp Asn Pro Leu Lys Arg Glu Glu Met His
 565 570 575
 Leu Glu Asp Ser Ala Asn Phe Ile Lys Tyr Glu Thr Asn Leu Thr Phe
 580 585 590
 Val Gly Cys Val Gly Met Leu Asp Pro Pro Arg Ile Glu Val Ala Ser
 595 600 605
 Ser Val Lys Leu Cys Arg Gln Ala Gly Ile Arg Val Ile Met Ile Thr
 610 615 620
 Gly Asp Asn Lys Gly Thr Ala Val Ala Ile Cys Arg Arg Ile Gly Ile
 625 630 635 640
 Phe Gly Gln Asp Glu Asp Val Thr Ser Lys Ala Phe Thr Gly Arg Glu
 645 650 655
 Phe Asp Glu Leu Ser Pro Ser Ala Gln Arg Asp Ala Cys Leu Asn Ala
 660 665 670

36571037

Arg	Cys	Phe	Ala	Arg	Val	Glu	Pro	Ser	His	Lys	Ser	Lys	Ile	Val	Glu
		675					680					685			
Phe	Leu	Gln	Ser	Phe	Asp	Glu	Ile	Thr	Ala	Met	Thr	Gly	Asp	Gly	Val
	690					695					700				
Asn	Asp	Ala	Pro	Ala	Leu	Lys	Lys	Ser	Glu	Ile	Gly	Ile	Ala	Met	Gly
705					710					715					720
Ser	Gly	Thr	Ala	Val	Ala	Lys	Thr	Ala	Ser	Glu	Met	Val	Leu	Ala	Asp
				725					730					735	
Asp	Asn	Phe	Ser	Thr	Ile	Val	Ala	Ala	Val	Glu	Glu	Gly	Arg	Ala	Ile
			740					745					750		
Tyr	Asn	Asn	Met	Lys	Gln	Phe	Ile	Arg	Tyr	Leu	Ile	Ser	Ser	Asn	Val
		755					760					765			
Gly	Glu	Val	Val	Cys	Ile	Phe	Leu	Thr	Ala	Ala	Leu	Gly	Phe	Pro	Glu
	770					775					780				
Ala	Leu	Ile	Pro	Val	Gln	Leu	Leu	Trp	Val	Asn	Leu	Val	Thr	Asp	Gly
785					790					795					800
Leu	Pro	Ala	Thr	Ala	Leu	Gly	Phe	Asn	Pro	Pro	Asp	Leu	Asp	Ile	Met
				805					810					815	
Asn	Lys	Pro	Pro	Arg	Asn	Pro	Lys	Glu	Pro	Leu	Ile	Ser	Gly	Trp	Leu
			820					825					830		
Phe	Phe	Arg	Tyr	Leu	Ala	Ile	Gly	Cys	Tyr	Val	Gly	Ala	Ala	Thr	Val
		835					840					845			
Gly	Ala	Ala	Ala	Trp	Trp	Phe	Ile	Ala	Ala	Asp	Gly	Gly	Pro	Arg	Val
	850					855					860				
Ser	Phe	Tyr	Gln	Leu	Ser	His	Phe	Leu	Gln	Cys	Lys	Glu	Asp	Asn	Pro
865					870					875					880
Asp	Phe	Asp	Gly	Val	Asp	Cys	Ala	Ile	Phe	Glu	Ser	Pro	Tyr	Pro	Met
				885					890					895	
Thr	Met	Ala	Leu	Ser	Val	Leu	Val	Thr	Ile	Glu	Met	Cys	Asn	Ala	Leu
			900					905					910		
Asn	Ser	Leu	Ser	Glu	Asn	Gln	Ser	Leu	Leu	Arg	Met	Pro	Pro	Trp	Glu
		915					920					925			
Asn	Ile	Trp	Leu	Val	Gly	Ser	Ile	Cys	Leu	Ser	Met	Ser	Leu	His	Phe
	930					935					940				
Leu	Ile	Leu	Tyr	Val	Glu	Pro	Leu	Pro	Leu	Ile	Phe	Gln	Ile	Thr	Pro
945					950					955					960
Leu	Asn	Leu	Thr	Gln	Trp	Leu	Met	Val	Leu	Lys	Ile	Ser	Leu	Pro	Val
				965					970					975	
Ile	Leu	Met	Asp	Glu	Thr	Leu	Lys	Phe	Val	Ala	Arg	Asn	Tyr	Leu	Glu
			980					985					990		
Gln	Pro	Gly	Lys	Glu	Cys	Val	Gln	Pro	Ala	Thr	Lys	Ser	Ser	Cys	Ser
		995					1000					1005			

36571037
 Leu Ser Ala Cys Thr Asp Gly Ile Ser Trp Pro Phe Val Leu Leu Ile
 1010 1015 1020

Met Pro Leu Val Val Trp Val Tyr Ser Thr Asp Thr Asn Phe Ser Asp
 1025 1030 1035 1040

Met Phe Trp Ser

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Ser Val Thr Ala Glu Gly Gly Leu Ser Leu Glu Gln Val Thr Asp Ala
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Arg Glu Arg Tyr Gly Pro Asn Glu Leu Pro Thr Glu Glu Gly Lys Ser
 35 40 45

Leu Trp Glu Leu Val Val Glu Gln Phe Glu Asp Leu Leu Val Arg Ile
 50 55 60

Leu Leu Leu Ala Ala Leu Val Ser Phe Val Leu Ala Trp Phe Glu Glu
 65 70 75 80

Gly Glu Glu Thr Thr Thr Ala Phe Val Glu Pro Leu Val Ile Met Leu
 85 90 95

Ile Leu Val Ala Asn Ala Ile Val Gly Val Trp Gln Glu Arg Asn Ala
 100 105 110

Glu Ser Ala Ile Glu Ala Leu Lys Glu Tyr Glu Pro Glu Met Gly Lys
 115 120 125

Val Ile Arg Ser Asp Arg Lys Gly Val Gln Arg Ile Arg Ala Arg Asp
 130 135 140

Ile Val Pro Gly Asp Ile Val Glu Val Ala Val Gly Asp Lys Val Pro
 145 150 155 160

Ala Asp Leu Arg Leu Ile Glu Ile Lys Ser Thr Thr Leu Arg Val Asp
 165 170 175

Gln Ser Ile Leu Thr Gly Glu Ser Val Ser Val Thr Lys His Thr Asp
 180 185 190

Ala Ile Pro Asp Pro Arg Ala Val Asn Gln Asp Lys Lys Asn Met Leu
 195 200 205

Phe Ser Gly Thr Asn Ile Ala Ser Gly Lys Ala Leu Gly Val Ala Val
 210 215 220

Ala Thr Gly Leu Gln Thr Glu Leu Gly Lys Ile Arg Ser Gln Met Ala
 225 230 235 240

Ala Val Glu Pro Glu Arg Thr Pro Leu Gln Arg Lys Leu Asp Glu Phe
 245 250 255

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Gly	Arg	Gln	Leu	Ser	His	Ala	Ile	Ser	Val	Ile	Cys	Val	Ala	Val	Trp
			260					265					270		
Val	Ile	Asn	Ile	Gly	His	Phe	Ala	Asp	Pro	Ala	His	Gly	Gly	Ser	Trp
		275					280					285			
Leu	Arg	Gly	Ala	Val	Tyr	Tyr	Phe	Lys	Ile	Ala	Val	Ala	Leu	Ala	Val
	290					295					300				
Ala	Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ala	Val	Ile	Thr	Thr	Cys	Leu	Ala
305					310					315					320
Leu	Gly	Thr	Arg	Arg	Met	Ala	Arg	Lys	Asn	Ala	Ile	Val	Arg	Ser	Leu
				325					330					335	
Pro	Ser	Val	Glu	Thr	Leu	Gly	Cys	Thr	Ser	Val	Ile	Cys	Ser	Asp	Lys
			340					345					350		
Thr	Gly	Thr	Leu	Thr	Thr	Asn	Gln	Met	Ser	Val	Cys	Arg	Met	Phe	Val
		355					360					365			
Val	Ala	Glu	Ala	Glu	Ala	Gly	Thr	Cys	Arg	Leu	His	Glu	Phe	Thr	Ile
	370					375					380				
Ser	Gly	Thr	Thr	Tyr	Thr	Pro	Glu	Gly	Glu	Val	Arg	Gln	Gly	Glu	Gln
385					390					395					400
Pro	Val	Arg	Cys	Gly	Gln	Phe	Asp	Gly	Leu	Val	Glu	Leu	Ala	Thr	Ile
				405					410					415	
Cys	Ala	Leu	Cys	Asn	Asp	Ser	Ala	Leu	Asp	Tyr	Asn	Glu	Ala	Lys	Gly
			420					425				430			
Val	Tyr	Glu	Lys	Val	Gly	Glu	Ala	Thr	Glu	Thr	Ala	Leu	Thr	Cys	Leu
		435					440					445			
Val	Glu	Lys	Met	Asn	Val	Phe	Asp	Thr	Asp	Leu	Lys	Gly	Leu	Ser	Arg
	450					455					460				
Val	Glu	Arg	Ala	Gly	Ala	Cys	Asn	Ser	Val	Ile	Lys	Gln	Leu	Met	Arg
465					470					475					480
Lys	Glu	Phe	Thr	Leu	Glu	Phe	Ser	Arg	Asp	Arg	Lys	Ser	Met	Ser	Val
				485					490					495	
Tyr	Cys	Thr	Pro	Thr	Arg	Ala	Asp	Pro	Lys	Val	Gln	Ser	Ser	Lys	Met
			500					505					510		
Phe	Val	Lys	Gly	Ala	Pro	Glu	Ser	Val	Ile	Glu	Arg	Cys	Ser	Ser	Val
		515					520					525			
Arg	Val	Gly	Ser	Arg	Thr	Ala	Pro	Leu	Ser	Thr	Thr	Ser	Arg	Glu	His
	530					535					540				
Ile	Leu	Ala	Lys	Ile	Arg	Asp	Trp	Gly	Ser	Gly	Ser	Asp	Thr	Leu	Arg
545					550					555					560
Cys	Leu	Ala	Leu	Ala	Thr	Arg	Asp	Thr	Pro	Pro	Arg	Lys	Glu	Asp	Met
				565					570					575	
His	Leu	Asp	Asp	Cys	Ser	Arg	Phe	Val	Gln	Tyr	Glu	Thr	Asp	Leu	Thr
			580					585					590		

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Phe	Val	Gly	Cys	Val	Gly	Met	Leu	Asp	Pro	Pro	Arg	Pro	Glu	Val	Ala
		595					600					605			
Ala	Cys	Val	Thr	Arg	Cys	Ser	Arg	Ala	Gly	Ile	Arg	Val	Val	Met	Ile
	610					615					620				
Thr	Gly	Asp	Asn	Lys	Gly	Thr	Ala	Val	Ala	Ile	Cys	Arg	Arg	Leu	Gly
625					630					635					640
Ile	Phe	Gly	Asp	Thr	Glu	Asp	Val	Leu	Gly	Lys	Ala	Tyr	Thr	Gly	Arg
				645					650					655	
Glu	Phe	Asp	Asp	Leu	Ser	Pro	Glu	Gln	Gln	Arg	Gln	Ala	Cys	Arg	Thr
			660					665					670		
Ala	Arg	Cys	Phe	Ala	Arg	Val	Glu	Pro	Ala	His	Lys	Ser	Arg	Ile	Val
		675					680					685			
Glu	Asn	Leu	Gln	Ser	Phe	Asn	Glu	Ile	Thr	Ala	Met	Thr	Gly	Asp	Gly
	690					695					700				
Val	Asn	Asp	Ala	Pro	Ala	Leu	Lys	Lys	Ala	Glu	Ile	Gly	Ile	Ala	Met
705					710					715					720
Gly	Ser	Gly	Thr	Ala	Val	Ala	Lys	Ser	Ala	Ala	Glu	Met	Val	Leu	Ser
				725					730					735	
Asp	Asp	Asn	Phe	Ala	Ser	Ile	Val	Ala	Ala	Val	Glu	Glu	Gly	Arg	Ala
			740					745					750		
Ile	Tyr	Asn	Asn	Met	Lys	Gln	Phe	Ile	Arg	Tyr	Leu	Ile	Ser	Ser	Asn
		755					760					765			
Val	Gly	Glu	Val	Val	Cys	Ile	Phe	Leu	Thr	Ala	Ile	Leu	Gly	Leu	Pro
	770					775					780				
Glu	Ala	Leu	Ile	Pro	Val	Gln	Leu	Leu	Trp	Val	Asn	Leu	Val	Thr	Asp
785					790					795					800
Gly	Leu	Pro	Ala	Thr	Ala	Leu	Gly	Phe	Asn	Pro	Pro	Asp	Leu	Asp	Ile
				805					810					815	
Met	Glu	Lys	Pro	Pro	Arg	Asn	Pro	Arg	Glu	Ala	Leu	Ile	Ser	Gly	Trp
			820					825					830		
Leu	Phe	Phe	Arg	Tyr	Leu	Ala	Ile	Gly	Val	Tyr	Val	Gly	Leu	Ala	Thr
		835					840					845			
Val	Ala	Ala	Ala	Thr	Trp	Trp	Phe	Ile	Ala	Asp	Ala	Glu	Gly	Pro	Gln
	850					855					860				
Val	Thr	Phe	Tyr	Gln	Leu	Arg	Asn	Phe	Leu	Lys	Cys	Ser	Glu	Asp	Asn
865					870					875					880
Pro	Leu	Phe	Ala	Gly	Ile	Asp	Cys	Lys	Val	Phe	Glu	Ser	Arg	Phe	Pro
				885					890					895	
Thr	Thr	Met	Ala	Leu	Ser	Val	Leu	Val	Thr	Ile	Glu	Met	Cys	Asn	Ala
			900					905					910		
Leu	Asn	Ser	Val	Ser	Glu	Asn	Gln	Ser	Leu	Leu	Arg	Met	Pro	Pro	Trp
		915					920					925			

36571037

Leu Asn Pro Trp Leu Leu Gly Ala Val Val Met Ser Met Ala Leu His
930 935 940
Phe Leu Ile Leu Leu Val Pro Pro Leu Pro Leu Ile Phe Gln Val Thr
945 950 955
Pro Leu Ser Gly Arg Gln Trp Gly Val Val Leu Gln Met Ser Leu Pro
965 970 975
Val Ile Leu Met Asp Glu Ala Leu Lys Tyr Leu Ser Arg Asn His Met
980 985 990
Asp Glu Lys Lys Asp Leu Lys
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Met Glu Glu Ala His Leu Leu Ser Ala Ala Asp Val Leu Arg Arg Phe
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Ser Val Thr Ala Glu Gly Gly Leu Ser Leu Glu Gln Val Thr Asp Ala
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Arg Glu Arg Tyr Gly Pro Asn Glu Leu Pro Thr Glu Glu Gly Lys Ser
35 40 45
Leu Trp Glu Leu Val Val Glu Gln Phe Glu Asp Leu Leu Val Arg Ile
50 55 60
Leu Leu Leu Ala Ala Leu Val Ser Phe Val Leu Ala Trp Phe Glu Glu
65 70 75 80
Gly Glu Glu Thr Thr Thr Ala Phe Val Glu Pro Leu Val Ile Met Leu
85 90 95
Ile Leu Val Ala Asn Ala Ile Val Gly Val Trp Gln Glu Arg Asn Ala
100 105 110
Glu Ser Ala Ile Glu Ala Leu Lys Glu Tyr Glu Pro Glu Met Gly Lys
115 120 125
Val Ile Arg Ser Asp Arg Lys Gly Val Gln Arg Ile Arg Ala Arg Asp
130 135 140
Ile Val Pro Gly Asp Ile Val Glu Val Ala Val Gly Asp Lys Val Pro
145 150 155 160
Ala Asp Leu Arg Leu Ile Glu Ile Lys Ser Thr Thr Leu Arg Val Asp
165 170 175
Gln Ser Ile Leu Thr Gly Glu Ser Val Ser Val Thr Lys His Thr Asp
180 185 190
Ala Ile Pro Asp Pro Arg Ala Val Asn Gln Asp Lys Lys Asn Met Leu
195 200 205
Phe Ser Gly Thr Asn Ile Ala Ser Gly Lys Ala Leu Gly Val Ala Val

										36571037					
	210					215				220					
Ala	Thr	Gly	Leu	Gln	Thr	Glu	Leu	Gly	Lys	Ile	Arg	Ser	Gln	Met	Ala
225					230					235					240
Ala	Val	Glu	Pro	Glu	Arg	Thr	Pro	Leu	Gln	Arg	Lys	Leu	Asp	Glu	Phe
				245					250					255	
Gly	Arg	Gln	Leu	Ser	His	Ala	Ile	Ser	Val	Ile	Cys	Val	Ala	Val	Trp
			260					265					270		
Val	Ile	Asn	Ile	Gly	His	Phe	Ala	Asp	Pro	Ala	His	Gly	Gly	Ser	Trp
		275					280					285			
Leu	Arg	Gly	Ala	Val	Tyr	Tyr	Phe	Lys	Ile	Ala	Val	Ala	Leu	Ala	Val
	290					295					300				
Ala	Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ala	Val	Ile	Thr	Thr	Cys	Leu	Ala
305					310					315					320
Leu	Gly	Thr	Arg	Arg	Met	Ala	Arg	Lys	Asn	Ala	Ile	Val	Arg	Ser	Leu
				325					330					335	
Pro	Ser	Val	Glu	Thr	Leu	Gly	Cys	Thr	Ser	Val	Ile	Cys	Ser	Asp	Lys
			340					345					350		
Thr	Gly	Thr	Leu	Thr	Thr	Asn	Gln	Met	Ser	Val	Cys	Arg	Met	Phe	Val
		355					360					365			
Val	Ala	Glu	Ala	Glu	Ala	Gly	Thr	Cys	Arg	Leu	His	Glu	Phe	Thr	Ile
	370					375					380				
Ser	Gly	Thr	Thr	Tyr	Thr	Pro	Glu	Gly	Glu	Val	Arg	Gln	Gly	Glu	Gln
385					390					395					400
Pro	Val	Arg	Cys	Gly	Gln	Phe	Asp	Gly	Leu	Val	Glu	Leu	Ala	Thr	Ile
				405					410					415	
Cys	Ala	Leu	Cys	Asn	Asp	Ser	Ala	Leu	Asp	Tyr	Asn	Glu	Ala	Lys	Gly
			420					425					430		
Val	Tyr	Glu	Lys	Val	Gly	Glu	Ala	Thr	Glu	Thr	Ala	Leu	Thr	Cys	Leu
		435					440					445			
Val	Glu	Lys	Met	Asn	Val	Phe	Asp	Thr	Asp	Leu	Lys	Gly	Leu	Ser	Arg
	450					455					460				
Val	Glu	Arg	Ala	Gly	Ala	Cys	Asn	Ser	Val	Ile	Lys	Gln	Leu	Met	Arg
465					470					475					480
Lys	Glu	Phe	Thr	Leu	Glu	Phe	Ser	Arg	Asp	Arg	Lys	Ser	Met	Ser	Val
				485					490					495	
Tyr	Cys	Thr	Pro	Thr	Arg	Ala	Asp	Pro	Lys	Val	Gln	Ser	Ser	Lys	Met
			500					505					510		
Phe	Val	Lys	Gly	Ala	Pro	Glu	Ser	Val	Ile	Glu	Arg	Cys	Ser	Ser	Val
		515					520					525			
Arg	Val	Gly	Ser	Arg	Thr	Ala	Pro	Leu	Ser	Thr	Thr	Ser	Arg	Glu	His
	530					535					540				
Ile	Leu	Ala	Lys	Ile	Arg	Asp	Trp	Gly	Ser	Gly	Ser	Asp	Thr	Leu	Arg

545 550 36571037 555 560
 Cys Leu Ala Leu Ala Thr Arg Asp Thr Pro Pro Arg Lys Glu Asp Met
 565 570 575
 His Leu Asp Asp Cys Ser Arg Phe Val Gln Tyr Glu Thr Asp Leu Thr
 580 585 590
 Phe Val Gly Cys Val Gly Met Leu Asp Pro Pro Arg Pro Glu Val Ala
 595 600 605
 Ala Cys Val Thr Arg Cys Ser Arg Ala Gly Ile Arg Val Val Met Ile
 610 615 620
 Thr Gly Asp Asn Lys Gly Thr Ala Val Ala Ile Cys Arg Arg Leu Gly
 625 630 635
 Ile Phe Gly Asp Thr Glu Asp Val Leu Gly Lys Ala Tyr Thr Gly Arg
 645 650 655
 Glu Phe Asp Asp Leu Ser Pro Glu Gln Gln Arg Gln Ala Cys Arg Thr
 660 665 670
 Ala Arg Cys Phe Ala Arg Val Glu Pro Ala His Lys Ser Arg Ile Val
 675 680 685
 Glu Asn Leu Gln Ser Phe Asn Glu Ile Thr Ala Met Thr Gly Asp Gly
 690 695 700
 Val Asn Asp Ala Pro Ala Leu Lys Lys Ala Glu Ile Gly Ile Ala Met
 705 710 715 720
 Gly Ser Gly Thr Ala Val Ala Lys Ser Ala Ala Glu Met Val Leu Ser
 725 730 735
 Asp Asp Asn Phe Ala Ser Ile Val Ala Ala Val Glu Glu Gly Arg Ala
 740 745 750
 Ile Tyr Asn Asn Met Lys Gln Phe Ile Arg Tyr Leu Ile Ser Ser Asn
 755 760 765
 Val Gly Glu Val Val Cys Ile Phe Leu Thr Ala Ile Leu Gly Leu Pro
 770 775 780
 Glu Ala Leu Ile Pro Val Gln Leu Leu Trp Val Asn Leu Val Thr Asp
 785 790 795 800
 Gly Leu Pro Ala Thr Ala Leu Gly Phe Asn Pro Pro Asp Leu Asp Ile
 805 810 815
 Met Glu Lys Pro Pro Arg Asn Pro Arg Glu Ala Leu Ile Ser Gly Trp
 820 825 830
 Leu Phe Phe Arg Tyr Leu Ala Ile Gly Val Tyr Val Gly Leu Ala Thr
 835 840 845
 Val Ala Ala Ala Thr Trp Trp Phe Ile Ala Asp Ala Glu Gly Pro Gln
 850 855 860
 Val Thr Phe Tyr Gln Leu Arg Asn Phe Leu Lys Cys Ser Glu Asp Asn
 865 870 875 880
 Pro Leu Phe Ala Gly Ile Asp Cys Lys Val Phe Glu Ser Arg Phe Pro

885 36571037 890 895
 Thr Thr Met Ala Leu Ser Val Leu Val Thr Ile Glu Met Cys Asn Ala
 900 905 910
 Leu Asn Ser Val Ser Glu Asn Gln Ser Leu Leu Arg Met Pro Pro Trp
 915 920 925
 Leu Asn Pro Trp Leu Leu Gly Ala Val Val Met Ser Met Ala Leu His
 930 935 940
 Phe Leu Ile Leu Leu Val Pro Pro Leu Pro Leu Ile Phe Gln Val Thr
 945 950 955 960
 Pro Leu Ser Gly Arg Gln Trp Gly Val Val Leu Gln Met Ser Leu Pro
 965 970 975
 Val Ile Leu Met Asp Glu Ala Leu Lys Tyr Leu Ser Arg Asn His Met
 980 985 990
 Asp Glu Val Leu Gly Thr Phe Met Gln Ala Arg Ser Arg Gln Leu Pro
 995 1000 1005
 Thr Thr Ser Arg Thr Pro Tyr His Thr Gly Lys Lys Gly Pro Glu Val
 1010 1015 1020
 Asn Pro Gly Ser Arg Gly Glu Ser Pro Val Trp Pro Ser Asp
 1025 1030 1035

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<211> 1026

<212> PRT

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<400> 19

Met Glu Glu Ala His Leu Leu Ser Ala Ala Asp Val Leu Arg Arg Phe
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 Ser Val Thr Ala Glu Gly Gly Leu Ser Leu Glu Gln Val Thr Asp Ala
 20 25 30
 Arg Glu Arg Tyr Gly Pro Asn Glu Leu Pro Thr Glu Glu Gly Lys Ser
 35 40 45
 Leu Trp Glu Leu Val Val Glu Gln Phe Glu Asp Leu Leu Val Arg Ile
 50 55 60
 Leu Leu Leu Ala Ala Leu Val Ser Phe Val Leu Ala Trp Phe Glu Glu
 65 70 75 80
 Gly Glu Glu Thr Thr Thr Ala Phe Val Glu Pro Leu Val Ile Met Leu
 85 90 95
 Ile Leu Val Ala Asn Ala Ile Val Gly Val Trp Gln Glu Arg Asn Ala
 100 105 110
 Glu Ser Ala Ile Glu Ala Leu Lys Glu Tyr Glu Pro Glu Met Gly Lys
 115 120 125
 Val Ile Arg Ser Asp Arg Lys Gly Val Gln Arg Ile Arg Ala Arg Asp
 130 135 140

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Ile 145	Val	Pro	Gly	Asp	Ile 150	Val	Glu	Val	Ala 155	Val	Gly	Asp	Lys	Val	Pro 160
Ala	Asp	Leu	Arg	Leu 165	Ile	Glu	Ile	Lys	Ser 170	Thr	Thr	Leu	Arg	Val 175	Asp
Gln	Ser	Ile	Leu 180	Thr	Gly	Glu	Ser	Val 185	Ser	Val	Thr	Lys	His 190	Thr	Asp
Ala	Ile	Pro 195	Asp	Pro	Arg	Ala	Val 200	Asn	Gln	Asp	Lys	Lys 205	Asn	Met	Leu
Phe	Ser 210	Gly	Thr	Asn	Ile	Ala 215	Ser	Gly	Lys	Ala	Leu 220	Gly	Val	Ala	Val
Ala 225	Thr	Gly	Leu	Gln	Thr 230	Glu	Leu	Gly	Lys	Ile 235	Arg	Ser	Gln	Met	Ala 240
Ala	Val	Glu	Pro	Glu 245	Arg	Thr	Pro	Leu	Gln 250	Arg	Lys	Leu	Asp	Glu 255	Phe
Gly	Arg	Gln	Leu 260	Ser	His	Ala	Ile	Ser 265	Val	Ile	Cys	Val	Ala 270	Val	Trp
Val	Ile	Asn 275	Ile	Gly	His	Phe	Ala 280	Asp	Pro	Ala	His	Gly 285	Gly	Ser	Trp
Leu 290	Arg	Gly	Ala	Val	Tyr	Tyr 295	Phe	Lys	Ile	Ala	Val 300	Ala	Leu	Ala	Val
Ala 305	Ala	Ile	Pro	Glu	Gly 310	Leu	Pro	Ala	Val	Ile 315	Thr	Thr	Cys	Leu	Ala 320
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Val	Glu 450	Lys	Met	Asn	Val	Phe 455	Asp	Thr	Asp	Leu	Lys 460	Gly	Leu	Ser	Arg
Val 465	Glu	Arg	Ala	Gly	Ala 470	Cys	Asn	Ser	Val	Ile 475	Lys	Gln	Leu	Met	Arg 480

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Leu Asn Pro Trp Leu Leu Gly Ala Val Val Met Ser Met Ala Leu His
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Val Ile Leu Met Asp Glu Ala Leu Lys Tyr Leu Ser Arg Asn His Met
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Asp Glu Val Leu Gly Thr Phe Met Gln Ala Arg Ser Arg Gln Leu Pro
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Leu Leu Leu Ala Ala Cys Ile Ser Phe Val Leu Ala Trp Phe Glu Glu
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Ala 165	Asp 166	Ile 167	Arg 168	Leu 169	Thr 170	Ser 171	Ile 172	Lys 173	Ser 174	Thr 175	Thr 176	Leu 177	Arg 178	Val 179	Asp 180
Gln 181	Ser 182	Ile 183	Leu 184	Thr 185	Gly 186	Glu 187	Ser 188	Val 189	Ser 190	Val 191	Ile 192	Lys 193	His 194	Thr 195	Asp 196
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Phe 213	Ser 214	Gly 215	Thr 216	Asn 217	Ile 218	Ala 219	Ala 220	Gly 221	Lys 222	Ala 223	Met 224	Gly 225	Val 226	Val 227	Val 228
Ala 229	Thr 230	Gly 231	Val 232	Asn 233	Thr 234	Glu 235	Ile 236	Gly 237	Lys 238	Ile 239	Arg 240	Asp 241	Glu 242	Met 243	Val 244
Ala 245	Thr 246	Glu 247	Gln 248	Glu 249	Arg 250	Thr 251	Pro 252	Leu 253	Gln 254	Gln 255	Lys 256	Leu 257	Asp 258	Glu 259	Phe 260
Gly 261	Glu 262	Gln 263	Leu 264	Ser 265	Lys 266	Val 267	Ile 268	Ser 269	Leu 270	Ile 271	Cys 272	Ile 273	Ala 274	Val 275	Trp 276
Ile 277	Ile 278	Asn 279	Ile 280	Gly 281	His 282	Phe 283	Asn 284	Asp 285	Pro 286	Val 287	His 288	Gly 289	Gly 290	Ser 291	Trp 292
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Ala 309	Ala 310	Ile 311	Pro 312	Glu 313	Gly 314	Leu 315	Pro 316	Ala 317	Val 318	Ile 319	Thr 320	Thr 321	Cys 322	Leu 323	Ala 324
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Leu 373	Asp 374	Lys 375	Val 376	Glu 377	Gly 378	Asp 379	Thr 380	Cys 381	Ser 382	Leu 383	Asn 384	Glu 385	Phe 386	Ser 387	Ile 388
Thr 389	Gly 390	Ser 391	Thr 392	Tyr 393	Ala 394	Pro 395	Ile 396	Gly 397	Glu 398	Val 399	Gln 400	Lys 401	Asp 402	Asp 403	Lys 404
Pro 405	Val 406	Lys 407	Cys 408	His 409	Gln 410	Tyr 411	Asp 412	Gly 413	Leu 414	Val 415	Glu 416	Leu 417	Ala 418	Thr 419	Ile 420

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Val	Glu	Lys	Met	Asn	Val	Phe	Asp	Thr	Glu	Leu	Lys	Gly	Leu	Ser	Lys
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Lys	Glu	Phe	Thr	Leu	Glu	Phe	Ser	Arg	Asp	Arg	Lys	Ser	Met	Ser	Val
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Tyr	Cys	Thr	Pro	Asn	Lys	Pro	Ser	Arg	Thr	Ser	Met	Ser	Lys	Met	Phe
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Ser	Gly	Thr	Ala	Val	Ala	Lys	Thr	Ala	Ser	Glu	Met	Val	Leu	Ala	Asp
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Ala Leu Ile Pro Val Gln Leu Leu Trp Val Asn Leu Val Thr Asp Gly
785 790 795 800
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805 810 815
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Asn Ile Trp Leu Val Gly Ser Ile Cys Leu Ser Met Ser Leu His Phe
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Pro	Val	Pro	Asp	Pro	Arg	Ala	Val	Asn	Gln	Asp	Lys	Lys	Asn	Met	Leu
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Thr	Gly	Thr	Leu	Thr	Thr	Asn	Gln	Met	Ser	Val	Cys	Arg	Met	Phe	Ile
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Ile Leu Val Ala Asn Ala Ile Val Gly Val Trp Gln Glu Arg Asn Ala
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Val Tyr Arg Gln Asp Arg Lys Ser Val Gln Arg Ile Lys Ala Lys Asp
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Ile Ile Asn Ile Gly His Phe Asn Asp Pro Val His Gly Gly Ser Trp
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Leu	Gly	Thr	Arg	Arg	Met	Ala	Lys	Lys	Asn	Ala	Ile	Val	Arg	Ser	Leu
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	370					375					380				
Thr	Gly	Ser	Thr	Tyr	Ala	Pro	Ile	Gly	Glu	Val	Gln	Lys	Asp	Asp	Lys
385					390					395					400
Pro	Val	Lys	Cys	His	Gln	Tyr	Asp	Gly	Leu	Val	Glu	Leu	Ala	Thr	Ile
				405					410					415	
Cys	Ala	Leu	Cys	Asn	Asp	Ser	Ala	Leu	Asp	Tyr	Asn	Glu	Ala	Lys	Gly
			420					425					430		
Val	Tyr	Glu	Lys	Val	Gly	Glu	Ala	Thr	Glu	Thr	Ala	Leu	Thr	Cys	Leu
		435					440					445			
Val	Glu	Lys	Met	Asn	Val	Phe	Asp	Thr	Glu	Leu	Lys	Gly	Leu	Ser	Lys
	450					455					460				
Ile	Glu	Arg	Ala	Asn	Ala	Cys	Asn	Ser	Val	Ile	Lys	Gln	Leu	Met	Lys
465					470					475					480
Lys	Glu	Phe	Thr	Leu	Glu	Phe	Ser	Arg	Asp	Arg	Lys	Ser	Met	Ser	Val
				485					490					495	
Tyr	Cys	Thr	Pro	Asn	Lys	Pro	Ser	Arg	Thr	Ser	Met	Ser	Lys	Met	Phe
			500					505					510		
Val	Lys	Gly	Ala	Pro	Glu	Gly	Val	Ile	Asp	Arg	Cys	Thr	His	Ile	Arg
		515					520					525			
Val	Gly	Ser	Thr	Lys	Val	Pro	Met	Thr	Pro	Gly	Val	Lys	Gln	Lys	Ile
	530					535					540				
Met	Ser	Val	Ile	Arg	Glu	Trp	Gly	Ser	Gly	Ser	Asp	Thr	Leu	Arg	Cys
545					550					555					560
Leu	Ala	Leu	Ala	Thr	His	Asp	Asn	Pro	Leu	Arg	Arg	Glu	Glu	Met	His
				565					570					575	
Leu	Glu	Asp	Ser	Ala	Asn	Phe	Ile	Lys	Tyr	Glu	Thr	Asn	Leu	Thr	Phe
			580					585					590		
Val	Gly	Cys	Val	Gly	Met	Leu	Asp	Pro	Pro	Arg	Ile	Glu	Val	Ala	Ser
		595					600					605			
Ser	Val	Lys	Leu	Cys	Arg	Gln	Ala	Gly	Ile	Arg	Val	Ile	Met	Ile	Thr
	610					615					620				

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Gly 625	Asp	Asn	Lys	Gly	Thr 630	Ala	Val	Ala	Ile	Cys 635	Arg	Arg	Ile	Gly	Ile 640
Phe	Gly	Gln	Asp	Glu 645	Asp	Val	Thr	Ser	Lys 650	Ala	Phe	Thr	Gly	Arg 655	Glu
Phe	Asp	Glu	Leu 660	Ser	Pro	Ser	Ala	Gln 665	Arg	Asp	Ala	Cys	Leu 670	Asn	Ala
Arg	Cys	Phe 675	Ala	Arg	Val	Glu	Pro 680	Ser	His	Lys	Ser	Lys 685	Ile	Val	Glu
Phe	Leu 690	Gln	Ser	Phe	Asp	Glu 695	Ile	Thr	Ala	Met	Thr 700	Gly	Asp	Gly	Val
Asn 705	Asp	Ala	Pro	Ala	Leu 710	Lys	Lys	Ser	Glu	Ile 715	Gly	Ile	Ala	Met	Gly 720
Ser	Gly	Thr	Ala	Val 725	Ala	Lys	Thr	Ala	Ser 730	Glu	Met	Val	Leu	Ala 735	Asp
Asp	Asn	Phe	Ser 740	Thr	Ile	Val	Ala	Ala 745	Val	Glu	Glu	Gly	Arg 750	Ala	Ile
Tyr	Asn	Asn 755	Met	Lys	Gln	Phe	Ile 760	Arg	Tyr	Leu	Ile	Ser 765	Ser	Asn	Val
Gly	Glu 770	Val	Val	Cys	Ile	Phe 775	Leu	Thr	Ala	Ala	Leu 780	Gly	Phe	Pro	Glu
Ala 785	Leu	Ile	Pro	Val	Gln 790	Leu	Leu	Trp	Val	Asn 795	Leu	Val	Thr	Asp	Gly 800
Leu	Pro	Ala	Thr	Ala 805	Leu	Gly	Phe	Asn	Pro 810	Pro	Asp	Leu	Asp	Ile 815	Met
Asn	Lys	Pro	Pro 820	Arg	Asn	Pro	Lys	Glu 825	Pro	Leu	Ile	Ser	Gly 830	Trp	Leu
Phe	Phe	Arg 835	Tyr	Leu	Ala	Ile	Gly 840	Cys	Tyr	Val	Gly	Ala 845	Ala	Thr	Val
Gly	Ala 850	Ala	Ala	Trp	Trp	Phe 855	Ile	Ala	Ala	Asp	Gly 860	Gly	Pro	Arg	Val
Ser 865	Phe	Tyr	Gln	Leu	Ser 870	His	Phe	Leu	Gln	Cys 875	Lys	Glu	Asp	Asn	Pro 880
Asp	Phe	Glu	Gly	Val 885	Asp	Cys	Ala	Ile	Phe 890	Glu	Ser	Pro	Tyr	Pro 895	Met
Thr	Met	Ala	Leu 900	Ser	Val	Leu	Val	Thr 905	Ile	Glu	Met	Cys	Asn	Ala	Leu
Asn	Ser	Leu 915	Ser	Glu	Asn	Gln	Ser 920	Leu	Leu	Arg	Met	Pro 925	Pro	Trp	Glu
Asn	Ile 930	Trp	Leu	Val	Gly	Ser 935	Ile	Cys	Leu	Ser	Met 940	Ser	Leu	His	Phe
Leu 945	Ile	Leu	Tyr	Val	Glu 950	Pro	Leu	Pro	Leu	Ile 955	Phe	Gln	Ile	Thr	Pro 960

Leu Asn Leu Thr Gln Trp Leu Met Val Leu Lys Ile Ser Leu Pro Val
 965 970 975
 Ile Leu Met Asp Glu Thr Leu Lys Phe Val Ala Arg Asn Tyr Leu Glu
 980 985 990
 Pro Gly Lys Glu Cys Ala Gln Pro Ala Thr Lys Pro Ser Cys Ser Leu
 995 1000 1005
 Ser Ala Cys Thr Asp Gly Ile Ser Trp Pro Phe Val Leu Leu Ile Met
 1010 1015 1020
 Pro Leu Val Val Trp Val Tyr Ser Thr Asp Thr Asn Phe Ser Asp Met
 1025 1030 1035 1040
 Phe Trp Ser

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 <212> PRT
 <213> Rattus norvegicus

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 20 25 30
 Lys Glu Arg Trp Gly Ser Asn Glu Leu Pro Ala Glu Glu Gly Lys Thr
 35 40 45
 Leu Leu Glu Leu Val Ile Glu Gln Phe Glu Asp Leu Leu Val Arg Ile
 50 55 60
 Leu Leu Leu Ala Ala Cys Ile Ser Phe Val Leu Ala Trp Phe Glu Glu
 65 70 75 80
 Gly Glu Glu Thr Ile Thr Ala Phe Val Glu Pro Phe Val Ile Leu Leu
 85 90 95
 Ile Leu Val Ala Asn Ala Ile Val Gly Val Trp Gln Glu Arg Asn Ala
 100 105 110
 Glu Asn Ala Ile Glu Ala Leu Lys Glu Tyr Glu Pro Glu Met Gly Lys
 115 120 125
 Val Tyr Arg Gln Asp Arg Lys Ser Val Gln Arg Ile Lys Ala Lys Asp
 130 135 140
 Ile Val Pro Gly Asp Ile Val Glu Ile Ala Val Gly Asp Lys Val Pro
 145 150 155 160
 Ala Asp Ile Arg Leu Thr Ser Ile Lys Ser Thr Thr Leu Arg Val Asp
 165 170 175
 Gln Ser Ile Leu Thr Gly Glu Ser Val Ser Val Ile Lys His Thr Asp
 180 185 190
 Pro Val Pro Asp Pro Arg Ala Val Asn Gln Asp Lys Lys Asn Met Leu
 195 200 205

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Phe	Ser	Gly	Thr	Asn	Ile	Ala	Ala	Gly	Lys	Ala	Met	Gly	Val	Val	Val
	210					215					220				
Ala	Thr	Gly	Val	Asn	Thr	Glu	Ile	Gly	Lys	Ile	Arg	Asp	Glu	Met	Val
225					230					235					240
Ala	Thr	Glu	Gln	Glu	Arg	Thr	Pro	Leu	Gln	Gln	Lys	Leu	Asp	Glu	Phe
				245					250					255	
Gly	Glu	Gln	Leu	Ser	Lys	Val	Ile	Ser	Leu	Ile	Cys	Ile	Ala	Val	Trp
			260					265					270		
Ile	Ile	Asn	Ile	Gly	His	Phe	Asn	Asp	Pro	Val	His	Gly	Gly	Ser	Trp
		275					280					285			
Ile	Arg	Gly	Ala	Ile	Tyr	Tyr	Phe	Lys	Ile	Ala	Val	Ala	Leu	Ala	Val
	290					295					300				
Ala	Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ala	Val	Ile	Thr	Thr	Cys	Leu	Ala
305					310					315					320
Leu	Gly	Thr	Arg	Arg	Met	Ala	Lys	Lys	Asn	Ala	Ile	Val	Arg	Ser	Leu
				325					330					335	
Pro	Ser	Val	Glu	Thr	Leu	Gly	Cys	Thr	Ser	Val	Ile	Cys	Ser	Asp	Lys
			340					345					350		
Thr	Gly	Thr	Leu	Thr	Thr	Asn	Gln	Met	Ser	Val	Cys	Arg	Met	Phe	Ile
		355					360					365			
Leu	Asp	Lys	Val	Glu	Gly	Asp	Thr	Cys	Ser	Leu	Asn	Glu	Phe	Thr	Ile
	370					375					380				
Thr	Gly	Ser	Thr	Tyr	Ala	Pro	Ile	Gly	Glu	Val	Gln	Lys	Asp	Asp	Lys
385					390					395					400
Pro	Val	Lys	Cys	His	Gln	Tyr	Asp	Gly	Leu	Val	Glu	Leu	Ala	Thr	Ile
				405					410					415	
Cys	Ala	Leu	Cys	Asn	Asp	Ser	Ala	Leu	Asp	Tyr	Asn	Glu	Ala	Lys	Gly
			420					425					430		
Val	Tyr	Glu	Lys	Val	Gly	Glu	Ala	Thr	Glu	Thr	Ala	Leu	Thr	Cys	Leu
		435					440					445			
Val	Glu	Lys	Met	Asn	Val	Phe	Asp	Thr	Glu	Leu	Lys	Gly	Leu	Ser	Lys
	450					455					460				
Ile	Glu	Arg	Ala	Asn	Ala	Cys	Asn	Ser	Val	Ile	Lys	Gln	Leu	Met	Lys
465					470					475					480
Lys	Glu	Phe	Thr	Leu	Glu	Phe	Ser	Arg	Asp	Arg	Lys	Ser	Met	Ser	Val
				485					490					495	
Tyr	Cys	Thr	Pro	Asn	Lys	Pro	Ser	Arg	Thr	Ser	Met	Ser	Lys	Met	Phe
			500					505					510		
Val	Lys	Gly	Ala	Pro	Glu	Gly	Val	Ile	Asp	Arg	Cys	Thr	His	Ile	Arg
		515					520					525			
Val	Gly	Ser	Thr	Lys	Val	Pro	Met	Thr	Pro	Gly	Val	Lys	Gln	Lys	Ile
	530					535					540				

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Met 545	Ser	Val	Ile	Arg	Glu 550	Trp	Gly	Ser	Gly	Ser 555	Asp	Thr	Leu	Arg	Cys 560
Leu	Ala	Leu	Ala	Thr 565	His	Asp	Asn	Pro	Leu 570	Arg	Arg	Glu	Glu	Met 575	His
Leu	Glu	Asp	Ser 580	Ala	Asn	Phe	Ile	Lys 585	Tyr	Glu	Thr	Asn	Leu 590	Thr	Phe
Val	Gly	Cys 595	Val	Gly	Met	Leu	Asp 600	Pro	Pro	Arg	Ile	Glu 605	Val	Ala	Ser
Ser 610	Val	Lys	Leu	Cys	Arg	Gln 615	Ala	Gly	Ile	Arg	Val 620	Ile	Met	Ile	Thr
Gly 625	Asp	Asn	Lys	Gly	Thr 630	Ala	Val	Ala	Ile	Cys 635	Arg	Arg	Ile	Gly	Ile 640
Phe	Gly	Gln	Asp	Glu 645	Asp	Val	Thr	Ser	Lys 650	Ala	Phe	Thr	Gly	Arg 655	Glu
Phe	Asp	Glu	Leu 660	Ser	Pro	Ser	Ala	Gln 665	Arg	Asp	Ala	Cys	Leu 670	Asn	Ala
Arg	Cys	Phe 675	Ala	Arg	Val	Glu	Pro 680	Ser	His	Lys	Ser	Lys 685	Ile	Val	Glu
Phe 690	Leu	Gln	Ser	Phe	Asp	Glu 695	Ile	Thr	Ala	Met	Thr 700	Gly	Asp	Gly	Val
Asn 705	Asp	Ala	Pro	Ala	Leu 710	Lys	Lys	Ser	Glu	Ile 715	Gly	Ile	Ala	Met	Gly 720
Ser	Gly	Thr	Ala	Val 725	Ala	Lys	Thr	Ala	Ser 730	Glu	Met	Val	Leu	Ala	Asp 735
Asp	Asn	Phe	Ser 740	Thr	Ile	Val	Ala	Ala 745	Val	Glu	Glu	Gly	Arg 750	Ala	Ile
Tyr	Asn	Asn 755	Met	Lys	Gln	Phe	Ile 760	Arg	Tyr	Leu	Ile	Ser 765	Ser	Asn	Val
Gly 770	Glu	Val	Val	Cys	Ile	Phe 775	Leu	Thr	Ala	Ala	Leu 780	Gly	Phe	Pro	Glu
Ala 785	Leu	Ile	Pro	Val	Gln 790	Leu	Leu	Trp	Val	Asn 795	Leu	Val	Thr	Asp	Gly 800
Leu	Pro	Ala	Thr	Ala 805	Leu	Gly	Phe	Asn	Pro 810	Pro	Asp	Leu	Asp	Ile 815	Met
Asn	Lys	Pro	Pro 820	Arg	Asn	Pro	Lys	Glu 825	Pro	Leu	Ile	Ser	Gly 830	Trp	Leu
Phe	Phe	Arg 835	Tyr	Leu	Ala	Ile	Gly 840	Cys	Tyr	Val	Gly	Ala 845	Ala	Thr	Val
Gly 850	Ala	Ala	Ala	Trp	Trp	Phe 855	Ile	Ala	Ala	Asp	Gly 860	Gly	Pro	Arg	Val
Ser 865	Phe	Tyr	Gln	Leu	Ser 870	His	Phe	Leu	Gln	Cys 875	Lys	Glu	Asp	Asn	Pro 880

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Asp Phe Glu Gly Val Asp Cys Ala Ile Phe Glu Ser Pro Tyr Pro Met
885 890 895
Thr Met Ala Leu Ser Val Leu Val Thr Ile Glu Met Cys Asn Ala Leu
900 905 910
Asn Ser Leu Ser Glu Asn Gln Ser Leu Leu Arg Met Pro Pro Trp Glu
915 920 925
Asn Ile Trp Leu Val Gly Ser Ile Cys Leu Ser Met Ser Leu His Phe
930 935 940
Leu Ile Leu Tyr Val Glu Pro Leu Pro Leu Ile Phe Gln Ile Thr Pro
945 950 955 960
Leu Asn Leu Thr Gln Trp Leu Met Val Leu Lys Ile Ser Leu Pro Val
965 970 975
Ile Leu Met Asp Glu Thr Leu Lys Phe Val Ala Arg Asn Tyr Leu Glu
980 985 990
Pro Ala Ile Leu Glu
995

<210> 24

<211> 997

<212> PRT

<213> Canis familiaris

<400> 24

Met Glu Asn Ala His Thr Lys Thr Val Glu Glu Val Leu Gly His Phe
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Gly Val Asn Glu Ser Thr Gly Leu Ser Leu Glu Gln Val Lys Lys Leu
20 25 30
Lys Glu Arg Trp Gly Ser Asn Glu Leu Pro Ala Glu Glu Gly Lys Thr
35 40 45
Leu Leu Glu Leu Val Ile Glu Gln Phe Glu Asp Leu Leu Val Arg Ile
50 55 60
Leu Leu Leu Ala Ala Cys Ile Ser Phe Val Leu Ala Trp Phe Glu Glu
65 70 75 80
Gly Glu Glu Thr Ile Thr Ala Phe Val Glu Pro Phe Val Ile Leu Leu
85 90 95
Ile Leu Val Ala Asn Ala Ile Val Gly Val Trp Gln Glu Arg Asn Ala
100 105 110
Glu Asn Ala Ile Glu Ala Leu Lys Glu Tyr Glu Pro Glu Met Gly Lys
115 120 125
Val Tyr Arg Gln Asp Arg Lys Ser Val Gln Arg Ile Lys Ala Lys Asp
130 135 140
Ile Val Pro Gly Asp Ile Val Glu Ile Ala Val Gly Asp Lys Val Pro
145 150 155 160
Ala Asp Ile Arg Leu Thr Ser Ile Lys Ser Thr Thr Leu Arg Val Asp

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										165		170		175			
Gln	Ser	Ile	Leu	Thr	Gly	Glu	Ser	Val	Ser	Val	Ile	Lys	His	Thr	Asp		
			180				185					190					
Pro	Val	Pro	Asp	Pro	Arg	Ala	Val	Asn	Gln	Asp	Lys	Lys	Asn	Met	Leu		
		195					200					205					
Phe	Ser	Gly	Thr	Asn	Ile	Ala	Ala	Gly	Lys	Ala	Met	Gly	Val	Val	Val		
		210			215						220						
Ala	Thr	Gly	Val	Asn	Thr	Glu	Ile	Gly	Lys	Ile	Arg	Asp	Glu	Met	Val		
225				230						235							
Ala	Thr	Glu	Gln	Glu	Arg	Thr	Pro	Leu	Gln	Gln	Lys	Leu	Asp	Glu	Phe		
				245					250					255			
Gly	Glu	Gln	Leu	Ser	Lys	Val	Ile	Ser	Leu	Ile	Cys	Ile	Ala	Val	Trp		
		260						265					270				
Ile	Ile	Asn	Ile	Gly	His	Phe	Asn	Asp	Pro	Val	His	Gly	Gly	Ser	Trp		
		275					280					285					
Ile	Arg	Gly	Ala	Ile	Tyr	Tyr	Phe	Lys	Ile	Ala	Val	Ala	Leu	Ala	Val		
290						295					300						
Ala	Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ala	Val	Ile	Thr	Thr	Cys	Leu	Ala		
305				310						315							
Leu	Gly	Thr	Arg	Arg	Met	Ala	Lys	Lys	Asn	Ala	Ile	Val	Arg	Ser	Leu		
				325					330					335			
Pro	Ser	Val	Glu	Thr	Leu	Gly	Cys	Thr	Ser	Val	Ile	Cys	Ser	Asp	Lys		
		340						345					350				
Thr	Gly	Thr	Leu	Thr	Thr	Asn	Gln	Met	Ser	Val	Cys	Arg	Met	Phe	Ile		
		355			360						365						
Leu	Asp	Arg	Val	Glu	Gly	Asp	Ser	Cys	Ser	Leu	Asn	Glu	Phe	Thr	Ile		
370						375					380						
Thr	Gly	Ser	Thr	Tyr	Ala	Pro	Ile	Gly	Glu	Val	His	Lys	Asp	Asp	Lys		
385				390						395							
Pro	Val	Lys	Cys	His	Gln	Tyr	Asp	Gly	Leu	Val	Glu	Leu	Ala	Thr	Ile		
				405					410					415			
Cys	Ala	Leu	Cys	Asn	Asp	Ser	Ala	Leu	Asp	Tyr	Asn	Glu	Ala	Lys	Gly		
		420						425					430				
Val	Tyr	Glu	Lys	Val	Gly	Glu	Ala	Thr	Glu	Thr	Ala	Leu	Thr	Cys	Leu		
		435			440						445						
Val	Glu	Lys	Met	Asn	Val	Phe	Asp	Thr	Glu	Leu	Lys	Gly	Leu	Ser	Lys		
450						455					460						
Ile	Glu	Arg	Ala	Asn	Ala	Cys	Asn	Ser	Val	Ile	Lys	Gln	Leu	Met	Lys		
465				470						475							
Lys	Glu	Phe	Thr	Leu	Glu	Phe	Ser	Arg	Asp	Arg	Lys	Ser	Met	Ser	Val		
				485					490					495			
Tyr	Cys	Thr	Pro	Asn	Lys	Pro	Ser	Arg	Thr	Ser	Met	Ser	Lys	Met	Phe		

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500					505					510					
Val	Lys	Gly	Ala	Pro	Glu	Gly	Val	Ile	Asp	Arg	Cys	Thr	His	Ile	Arg
		515					520					525			
Val	Gly	Ser	Thr	Lys	Val	Pro	Met	Thr	Pro	Gly	Val	Lys	Gln	Lys	Val
	530					535					540				
Met	Ser	Val	Ile	Arg	Glu	Trp	Gly	Ser	Gly	Ser	Asp	Thr	Leu	Arg	Cys
545					550					555					560
Leu	Ala	Leu	Ala	Thr	His	Asp	Asn	Pro	Leu	Arg	Arg	Glu	Glu	Met	Asn
				565					570					575	
Leu	Glu	Asp	Ser	Ala	Asn	Phe	Ile	Lys	Tyr	Glu	Thr	Asn	Leu	Thr	Phe
			580					585					590		
Val	Gly	Cys	Val	Gly	Met	Leu	Asp	Pro	Pro	Arg	Ile	Glu	Val	Ala	Ser
		595					600					605			
Ser	Val	Lys	Leu	Cys	Arg	Gln	Ala	Gly	Ile	Arg	Val	Ile	Met	Ile	Thr
	610					615					620				
Gly	Asp	Asn	Lys	Gly	Thr	Ala	Val	Ala	Ile	Cys	Arg	Arg	Ile	Gly	Ile
625					630					635					640
Phe	Gly	Gln	Asp	Glu	Asp	Val	Thr	Ser	Lys	Ala	Phe	Thr	Gly	Arg	Glu
				645					650					655	
Phe	Asp	Glu	Leu	Ser	Pro	Ser	Ala	Gln	Arg	Asp	Ala	Cys	Leu	Asn	Ala
			660					665					670		
Arg	Cys	Phe	Ala	Arg	Val	Glu	Pro	Ser	His	Lys	Ser	Lys	Ile	Val	Glu
		675					680					685			
Phe	Leu	Gln	Ser	Phe	Asp	Glu	Ile	Thr	Ala	Met	Thr	Gly	Asp	Gly	Val
	690					695					700				
Asn	Asp	Ala	Pro	Ala	Leu	Lys	Lys	Ser	Glu	Ile	Gly	Ile	Ala	Met	Gly
705					710					715					720
Ser	Gly	Thr	Ala	Val	Ala	Lys	Thr	Ala	Ser	Glu	Met	Val	Leu	Ala	Asp
				725					730					735	
Asp	Asn	Phe	Ser	Thr	Ile	Val	Ala	Ala	Val	Glu	Glu	Gly	Arg	Ala	Ile
			740					745					750		
Tyr	Asn	Asn	Met	Lys	Gln	Phe	Ile	Arg	Tyr	Leu	Ile	Ser	Ser	Asn	Val
		755					760					765			
Gly	Glu	Val	Val	Cys	Ile	Phe	Leu	Thr	Ala	Ala	Leu	Gly	Phe	Pro	Glu
	770					775					780				
Ala	Leu	Ile	Pro	Val	Gln	Leu	Leu	Trp	Val	Asn	Leu	Val	Thr	Asp	Gly
785					790					795					800
Leu	Pro	Ala	Thr	Ala	Leu	Gly	Phe	Asn	Pro	Pro	Asp	Leu	Asp	Ile	Met
				805					810					815	
Asn	Lys	Pro	Pro	Arg	Asn	Pro	Lys	Glu	Pro	Leu	Ile	Ser	Gly	Trp	Leu
			820					825					830		
Phe	Phe	Arg	Tyr	Leu	Ala	Ile	Gly	Cys	Tyr	Val	Gly	Ala	Ala	Thr	Val

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835		840		845
Gly 850	Ala Ala Trp Trp Phe 855	Ile Ala Ala Asp 860	Gly 860	Gly Pro Arg Val
Ser 865	Phe Tyr Gln Leu Ser 870	His Phe Leu Gln Cys 875	Lys Asp Asp Asn Pro 880	
Asp	Phe Glu Gly Val 885	Asp Cys Ala Ile Phe 890	Glu Ser Pro Tyr Pro 895	Met
Thr	Met Ala Leu 900	Ser Val Leu Val Thr 905	Ile Glu Met Cys Asn 910	Ala Leu
Asn	Ser Leu 915	Ser Glu Asn Gln Ser 920	Leu Leu Arg Met Pro 925	Pro Trp Glu
Asn 930	Ile Trp Leu Val Gly Ser 935	Ile Cys Leu Ser Met 940	Ser Leu His Phe	
Leu 945	Ile Leu Tyr Val Glu 950	Pro Leu Pro Leu Ile 955	Phe Gln Ile Thr Pro 960	
Leu	Asn Leu Thr Gln 965	Trp Leu Met Val Leu 970	Lys Ile Ser Leu Pro 975	Val
Ile	Leu Met Asp 980	Glu Thr Leu Lys Phe 985	Val Ala Arg Asn Tyr 990	Leu Glu
Pro	Ala Ile 995	Leu Glu		

<210> 25
 <211> 997
 <212> PRT
 <213> Felis catus

<400> 25

Met 1	Glu Asn Ala His 5	Thr Lys Thr Val Glu 10	Glu Val Leu Gly Tyr 15	Phe
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Lys	Glu Arg 35	Trp Gly Ser Asn Glu 40	Leu Pro Ala Glu Glu 45	Gly Lys Thr
Leu 50	Glu Leu Val Ile Glu 55	Gln Phe Glu Asp Leu 60	Leu Val Arg Ile	
Leu 65	Leu Leu Ala Ala Cys 70	Ile Ser Phe Val Leu 75	Ala Trp Phe Glu Glu 80	
Gly	Glu Glu Thr Ile 85	Thr Ala Phe Val Glu 90	Pro Phe Val Ile Leu 95	Leu
Ile	Leu Val Ala 100	Asn Ala Ile Val Gly 105	Val Trp Gln Glu Arg 110	Asn Ala
Glu	Asn Ala 115	Ile Glu Ala Leu Lys 120	Glu Tyr Glu Pro Glu 125	Met Gly Lys

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Val	Tyr	Arg	Gln	Asp	Arg	Lys	Ser	Val	Gln	Arg	Ile	Lys	Ala	Lys	Asp
130						135					140				
Ile	Val	Pro	Gly	Asp	Ile	Val	Glu	Ile	Ala	Val	Gly	Asp	Lys	Val	Pro
145					150					155					160
Ala	Asp	Ile	Arg	Leu	Thr	Ser	Ile	Lys	Ser	Thr	Thr	Leu	Arg	Val	Asp
				165					170					175	
Gln	Ser	Ile	Leu	Thr	Gly	Glu	Ser	Val	Ser	Val	Ile	Lys	His	Thr	Asp
			180					185					190		
Pro	Val	Pro	Asp	Pro	Arg	Ala	Val	Asn	Gln	Asp	Lys	Lys	Asn	Met	Leu
		195					200					205			
Phe	Ser	Gly	Thr	Asn	Ile	Ala	Ala	Gly	Lys	Ala	Met	Gly	Val	Val	Val
	210					215					220				
Ala	Thr	Gly	Val	Asn	Thr	Glu	Ile	Gly	Lys	Ile	Arg	Asp	Glu	Met	Val
225					230					235					240
Ala	Thr	Glu	Gln	Glu	Arg	Thr	Pro	Leu	Gln	Gln	Lys	Leu	Asp	Glu	Phe
				245					250					255	
Gly	Glu	Gln	Leu	Ser	Lys	Val	Ile	Ser	Leu	Ile	Cys	Ile	Ala	Val	Trp
			260					265					270		
Ile	Ile	Asn	Ile	Gly	His	Phe	Asn	Asp	Pro	Val	His	Gly	Gly	Ser	Trp
		275					280					285			
Ile	Arg	Gly	Ala	Ile	Tyr	Tyr	Phe	Lys	Ile	Ala	Val	Ala	Leu	Ala	Val
	290					295					300				
Ala	Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ala	Val	Ile	Thr	Thr	Cys	Leu	Ala
305					310					315					320
Leu	Gly	Thr	Arg	Arg	Met	Ala	Lys	Lys	Asn	Ala	Ile	Val	Arg	Ser	Leu
				325					330					335	
Pro	Ser	Val	Glu	Thr	Leu	Gly	Cys	Thr	Ser	Val	Ile	Cys	Ser	Asp	Lys
			340					345					350		
Thr	Gly	Thr	Leu	Thr	Thr	Asn	Gln	Met	Ser	Val	Cys	Arg	Met	Phe	Ile
		355					360					365			
Leu	Asp	Lys	Val	Glu	Gly	Asp	Thr	Cys	Ser	Leu	Asn	Glu	Phe	Thr	Ile
	370					375					380				
Thr	Gly	Ser	Thr	Tyr	Ala	Pro	Ile	Gly	Glu	Val	His	Lys	Asp	Asp	Lys
385					390					395					400
Pro	Val	Lys	Cys	His	Gln	Tyr	Asp	Gly	Leu	Val	Glu	Leu	Ala	Thr	Ile
				405					410					415	
Cys	Ala	Leu	Cys	Asn	Asp	Ser	Ala	Leu	Asp	Tyr	Asn	Glu	Ala	Lys	Gly
			420					425					430		
Val	Tyr	Lys	Lys	Phe	Gly	Glu	Ala	Thr	Glu	Thr	Ala	Leu	Thr	Cys	Leu
		435					440					445			
Val	Glu	Lys	Met	Asn	Val	Phe	Asp	Thr	Glu	Leu	Lys	Gly	Leu	Ser	Lys
	450					455					460				

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Ile 465	Glu	Arg	Ala	Asn	Ala 470	Cys	Asn	Ser	Val	Ile 475	Lys	Gln	Leu	Met	Lys 480
Lys	Glu	Phe	Thr	Leu 485	Glu	Phe	Ser	Arg	Asp 490	Arg	Lys	Ser	Met	Ser	Val 495
Tyr	Cys	Thr	Pro 500	Asn	Lys	Pro	Ser	Arg 505	Thr	Ser	Met	Ser	Lys 510	Met	Phe
Val	Lys	Gly 515	Ala	Pro	Glu	Gly	Val 520	Ile	Asp	Arg	Cys	Thr 525	His	Ile	Arg
Val	Gly 530	Ser	Thr	Lys	Val	Pro 535	Met	Thr	Pro	Gly	Val 540	Lys	Gln	Lys	Val
Met 545	Ser	Val	Ile	Arg	Glu 550	Trp	Gly	Ser	Gly	Ser 555	Asp	Thr	Leu	Arg	Cys 560
Leu	Ala	Leu	Ala	Thr 565	His	Asp	Asn	Pro	Leu 570	Arg	Arg	Glu	Glu	Met 575	Asn
Leu	Glu	Asp	Ser 580	Ala	Asn	Phe	Ile	Lys 585	Tyr	Glu	Thr	Asn	Leu 590	Thr	Phe
Val	Gly	Cys 595	Val	Gly	Met	Leu	Asp 600	Pro	Pro	Arg	Ile	Glu 605	Val	Ala	Ser
Ser	Val 610	Lys	Leu	Cys	Arg	Gln 615	Ala	Gly	Ile	Arg	Val 620	Ile	Met	Ile	Thr
Gly 625	Asp	Asn	Lys	Gly	Thr 630	Ala	Val	Ala	Ile	Cys 635	Arg	Arg	Ile	Gly	Ile 640
Phe	Gly	Gln	Asp	Glu 645	Asp	Val	Thr	Ser	Lys 650	Ala	Phe	Thr	Gly	Arg 655	Glu
Phe	Asp	Glu	Leu 660	Ser	Pro	Ser	Ala	Gln 665	Arg	Asp	Ala	Cys	Leu 670	Asn	Ala
Arg	Cys	Phe 675	Ala	Arg	Val	Glu	Pro 680	Ser	His	Lys	Ser	Lys 685	Ile	Val	Glu
Phe	Leu 690	Gln	Ser	Phe	Asp	Glu 695	Ile	Thr	Ala	Met	Thr 700	Gly	Asp	Gly	Val
Asn 705	Asp	Ala	Pro	Ala	Leu 710	Lys	Lys	Ser	Glu	Ile 715	Gly	Ile	Ala	Met	Gly 720
Ser	Gly	Thr	Ala 725	Val	Ala	Lys	Thr	Ala	Ser 730	Glu	Met	Val	Leu 735	Ala	Asp
Asp	Asn	Phe	Ser 740	Thr	Ile	Val	Ala	Ala 745	Val	Glu	Glu	Gly	Arg 750	Ala	Ile
Tyr	Asn 755	Asn	Met	Lys	Gln	Phe	Ile 760	Arg	Tyr	Leu	Ile	Ser 765	Ser	Asn	Val
Gly	Glu 770	Val	Val	Cys	Ile	Phe 775	Leu	Thr	Ala	Ala	Leu 780	Gly	Phe	Pro	Glu
Ala 785	Leu	Ile	Pro	Val	Gln 790	Leu	Leu	Trp	Val	Asn 795	Leu	Val	Thr	Asp	Gly 800

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Leu Pro Ala Thr Ala₈₀₅ Leu Gly Phe Asn Pro₈₁₀ Pro Asp Leu Asp Ile₈₁₅ Met

Asn Lys Pro Pro₈₂₀ Arg Asn Pro Lys Glu₈₂₅ Pro Leu Ile Ser Gly₈₃₀ Trp Leu

Phe Phe Arg₈₃₅ Tyr Leu Ala Ile Gly₈₄₀ Cys Tyr Val Gly Ala₈₄₅ Ala Thr Val

Gly Ala₈₅₀ Ala Ala Trp Trp Phe₈₅₅ Ile Ala Ala Asp Gly₈₆₀ Gly Pro Arg Val

Ser₈₆₅ Phe Tyr Gln Leu Ser₈₇₀ His Phe Leu Gln Cys₈₇₅ Lys Asp Asp Asn Pro₈₈₀

Asp Phe Glu Gly Val₈₈₅ Asp Cys Ala Ile Phe₈₉₀ Glu Ser Pro Tyr Pro₈₉₅ Met

Thr Met Ala Leu₉₀₀ Ser Val Leu Val Thr₉₀₅ Ile Glu Met Cys Asn₉₁₀ Ala Leu

Asn Ser Leu₉₁₅ Ser Glu Asn Gln Ser₉₂₀ Leu Leu Arg Met Pro₉₂₅ Pro Trp Glu

Asn Ile₉₃₀ Trp Leu Val Gly Ser₉₃₅ Ile Cys Leu Ser Met₉₄₀ Ser Leu His Phe

Leu₉₄₅ Ile Leu Tyr Val Glu₉₅₀ Pro Leu Pro Leu Ile₉₅₅ Phe Gln Ile Thr Pro₉₆₀

Leu Asn Leu Thr Gln₉₆₅ Trp Leu Met Val Leu₉₇₀ Lys Ile Ser Leu Pro₉₇₅ Val

Ile Leu Met Asp₉₈₀ Glu Thr Leu Lys Phe₉₈₅ Val Ala Arg Asn Tyr₉₉₀ Leu Glu

Pro Ala Ile₉₉₅ Leu Glu

<210> 26
 <211> 997
 <212> PRT
 <213> Sus scrofa

<400> 26
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Gly Val Asn Glu₂₀ Ser Thr Gly Leu Ser₂₅ Leu Glu Gln Val Lys₃₀ Lys Leu

Lys Glu Arg₃₅ Trp Gly Ser Asn Glu₄₀ Leu Pro Ala Glu Glu₄₅ Gly Lys Thr

Leu₅₀ Glu Leu Val Ile Glu₅₅ Gln Phe Glu Asp Leu₆₀ Leu Val Arg Ile

Leu₆₅ Leu Leu Ala Ala Cys₇₀ Ile Ser Phe Val Leu₇₅ Ala Trp Phe Glu Glu₈₀

Gly Glu Glu Thr Ile₈₅ Thr Ala Phe Val Glu₉₀ Pro Phe Val Ile Leu₉₅ Leu

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Ile Leu Val Ala Asn Ala Ile Val Gly Val Trp Gln Glu Arg Asn Ala
100 105 110
Glu Asn Ala Ile Glu Ala Leu Lys Glu Tyr Glu Pro Glu Met Gly Lys
115 120 125
Val Tyr Arg Gln Asp Arg Lys Ser Val Gln Arg Ile Lys Ala Lys Asp
130 135 140
Ile Val Pro Gly Asp Ile Val Glu Ile Ala Val Gly Asp Lys Val Pro
145 150 155 160
Ala Asp Ile Arg Leu Thr Ser Ile Lys Ser Thr Thr Leu Arg Val Asp
165 170 175
Gln Ser Ile Leu Thr Gly Glu Ser Val Ser Val Ile Lys His Thr Asp
180 185 190
Pro Val Pro Asp Pro Arg Ala Val Asn Gln Asp Lys Lys Asn Met Leu
195 200 205
Phe Ser Gly Thr Asn Ile Ala Ala Gly Lys Ala Met Gly Val Val Val
210 215 220
Ala Thr Gly Val Asn Thr Glu Ile Gly Lys Ile Arg Asp Glu Met Val
225 230 235 240
Ala Thr Glu Gln Glu Arg Thr Pro Leu Gln Gln Lys Leu Asp Glu Phe
245 250 255
Gly Glu Gln Leu Ser Lys Val Ile Ser Leu Ile Cys Ile Ala Val Trp
260 265 270
Ile Ile Asn Ile Gly His Phe Asn Asp Pro Val His Gly Gly Ser Trp
275 280 285
Ile Arg Gly Ala Ile Tyr Tyr Phe Lys Ile Ala Val Ala Leu Ala Val
290 295 300
Ala Ala Ile Pro Glu Gly Leu Pro Ala Val Ile Thr Thr Cys Leu Ala
305 310 315 320
Leu Gly Thr Arg Arg Met Ala Lys Lys Asn Ala Ile Val Arg Ser Leu
325 330 335
Pro Ser Val Glu Thr Leu Gly Cys Thr Ser Val Ile Cys Ser Asp Lys
340 345 350
Thr Gly Thr Leu Thr Thr Asn Gln Met Ser Val Cys Arg Met Phe Ile
355 360 365
Leu Asp Lys Val Glu Gly Asp Thr Cys Ser Leu Asn Glu Phe Thr Ile
370 375 380
Thr Gly Ser Thr Tyr Ala Pro Ile Gly Glu Val His Lys Asp Asp Lys
385 390 395 400
Pro Val Lys Cys His Gln Tyr Asp Gly Leu Val Glu Leu Ala Thr Ile
405 410 415
Cys Ala Leu Cys Asn Asp Ser Ala Leu Asp Tyr Asn Glu Ala Lys Gly
420 425 430

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Val Tyr Glu Lys Val Gly Glu Ala Thr Glu Thr Ala Leu Thr Cys Leu
435 440 445

Val Glu Lys Met Asn Val Phe Asp Thr Glu Leu Lys Gly Leu Ser Lys
450 455 460

Ile Glu Arg Ala Asn Ala Cys Asn Ser Val Ile Lys Gln Leu Met Lys
465 470 475 480

Lys Glu Phe Thr Leu Glu Phe Ser Arg Asp Arg Lys Ser Met Ser Val
485 490 495

Tyr Cys Thr Pro Asn Lys Pro Ser Arg Thr Ser Met Ser Lys Met Phe
500 505 510

Val Lys Gly Ala Pro Glu Gly Val Ile Asp Arg Cys Thr His Ile Arg
515 520 525

Val Gly Ser Thr Lys Val Pro Met Thr Pro Gly Val Lys Gln Lys Ile
530 535 540

Met Ser Val Ile Arg Glu Trp Gly Ser Gly Ser Asp Thr Leu Arg Cys
545 550 555 560

Leu Ala Leu Ala Thr His Asp Asn Pro Met Arg Arg Glu Glu Met Asn
565 570 575

Leu Glu Asp Ser Ala Asn Phe Ile Lys Tyr Glu Thr Asn Leu Thr Phe
580 585 590

Val Gly Cys Val Gly Met Leu Asp Pro Pro Arg Ile Glu Val Ala Ser
595 600 605

Ser Val Lys Leu Cys Arg Gln Ala Gly Ile Arg Val Ile Met Ile Thr
610 615 620

Gly Asp Asn Lys Gly Thr Ala Val Ala Ile Cys Arg Arg Ile Gly Ile
625 630 635 640

Phe Gly Gln Asp Glu Asp Val Thr Ser Lys Ala Phe Thr Gly Arg Glu
645 650 655

Phe Asp Glu Leu Asn Pro Ser Ala Gln Arg Glu Ala Cys Leu Asn Ala
660 665 670

Arg Cys Phe Ala Arg Val Glu Pro Ser His Lys Ser Lys Ile Val Glu
675 680 685

Phe Leu Gln Ser Phe Asp Glu Ile Thr Ala Met Thr Gly Asp Gly Val
690 695 700

Asn Asp Ala Pro Ala Leu Lys Lys Ser Glu Ile Gly Ile Ala Met Gly
705 710 715 720

Ser Gly Thr Ala Val Ala Lys Thr Ala Ser Glu Met Val Leu Ala Asp
725 730 735

Asp Asn Phe Ser Thr Ile Val Ala Ala Val Glu Glu Gly Arg Ala Ile
740 745 750

Tyr Asn Asn Met Lys Gln Phe Ile Arg Tyr Leu Ile Ser Ser Asn Val
755 760 765

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Gly Glu Val Val Cys Ile Phe Leu Thr Ala Ala Leu Gly Phe Pro Glu
770 775 780
Ala Leu Ile Pro Val Gln Leu Leu Trp Val Asn Leu Val Thr Asp Gly
785 790 795 800
Leu Pro Ala Thr Ala Leu Gly Phe Asn Pro Pro Asp Leu Asp Ile Met
805 810 815
Asn Lys Pro Pro Arg Asn Pro Lys Glu Pro Leu Ile Ser Gly Trp Leu
820 825 830
Phe Phe Arg Tyr Leu Ala Ile Gly Cys Tyr Val Gly Ala Ala Thr Val
835 840 845
Gly Ala Ala Ala Trp Trp Phe Ile Ala Ala Asp Gly Gly Pro Arg Val
850 855 860
Thr Phe Tyr Gln Leu Ser His Phe Leu Gln Cys Lys Glu Asp Asn Pro
865 870 875 880
Asp Phe Glu Gly Val Asp Cys Ala Val Phe Glu Ser Pro Tyr Pro Met
885 890 895
Thr Met Ala Leu Ser Val Leu Val Thr Ile Glu Met Cys Asn Ala Leu
900 905 910
Asn Ser Leu Ser Glu Asn Gln Ser Leu Leu Arg Met Pro Pro Trp Glu
915 920 925
Asn Ile Trp Leu Val Gly Ser Ile Cys Leu Ser Met Ser Leu His Phe
930 935 940
Leu Ile Leu Tyr Val Glu Pro Leu Pro Leu Ile Phe Gln Ile Thr Pro
945 950 955 960
Leu Asn Leu Thr Gln Trp Leu Met Val Leu Lys Ile Ser Leu Pro Val
965 970 975
Ile Leu Met Asp Glu Thr Leu Lys Phe Val Ala Arg Asn Tyr Leu Glu
980 985 990
Pro Ala Ile Leu Glu
995

<210> 27
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<212> PRT
<213> Sus scrofa

<400> 27
Met Glu Asn Ala His Thr Lys Thr Val Glu Glu Val Leu Gly His Phe
1 5 10 15
Gly Val Asn Glu Ser Thr Gly Leu Ser Leu Glu Gln Val Lys Lys Leu
20 25 30
Lys Glu Arg Trp Gly Ser Asn Glu Leu Pro Ala Glu Glu Gly Lys Thr
35 40 45
Leu Leu Glu Leu Val Ile Glu Gln Phe Glu Asp Leu Leu Val Arg Ile

50 55 36571037 60
 Leu 65 Leu Leu Ala Ala Cys 70 Ile Ser Phe Val Leu 75 Ala Trp Phe Glu Glu 80
 Gly Glu Glu Thr Ile 85 Thr Ala Phe Val Glu 90 Pro Phe Val Ile Leu 95
 Ile Leu Val Ala 100 Asn Ala Ile Val Gly 105 Val Trp Gln Glu Arg Asn Ala 110
 Glu Asn Ala 115 Ile Glu Ala Leu Lys 120 Glu Tyr Glu Pro Glu 125 Met Gly Lys
 Val Tyr 130 Arg Gln Asp Arg Lys 135 Ser Val Gln Arg Ile 140 Lys Ala Lys Asp
 Ile 145 Val Pro Gly Asp Ile 150 Val Glu Ile Ala Val 155 Gly Asp Lys Val Pro 160
 Ala Asp Ile Arg Leu 165 Thr Ser Ile Lys Ser 170 Thr Thr Leu Arg Val 175 Asp
 Gln Ser Ile Leu 180 Thr Gly Glu Ser Val 185 Ser Val Ile Lys His 190 Thr Asp
 Pro Val Pro 195 Asp Pro Arg Ala Val 200 Asn Gln Asp Lys Lys 205 Asn Met Leu
 Phe Ser 210 Gly Thr Asn Ile Ala 215 Ala Gly Lys Ala Met 220 Gly Val Val Val
 Ala Thr Gly Val Asn Thr 230 Glu Ile Gly Lys Ile 235 Arg Asp Glu Met Val 240
 Ala Thr Glu Gln Glu 245 Arg Thr Pro Leu Gln Gln Lys Leu Asp Glu Phe 255
 Gly Glu Gln Leu 260 Ser Lys Val Ile Ser 265 Leu Ile Cys Ile Ala Val Trp 270
 Ile Ile Asn 275 Ile Gly His Phe Asn 280 Asp Pro Val His Gly 285 Gly Ser Trp
 Ile Arg 290 Gly Ala Ile Tyr Tyr 295 Phe Lys Ile Ala Val 300 Ala Leu Ala Val
 Ala 305 Ala Ile Pro Glu Gly 310 Leu Pro Ala Val Ile 315 Thr Thr Cys Leu Ala 320
 Leu Gly Thr Arg Arg 325 Met Ala Lys Lys Asn 330 Ala Ile Val Arg Ser 335 Leu
 Pro Ser Val Glu 340 Thr Leu Gly Cys Thr 345 Ser Val Ile Cys Ser 350 Asp Lys
 Thr Gly Thr 355 Leu Thr Thr Asn Gln 360 Met Ser Val Cys Arg 365 Met Phe Ile
 Leu Asp 370 Lys Val Glu Gly Asp 375 Thr Cys Ser Leu Asn 380 Glu Phe Thr Ile
 Thr Gly Ser Thr Tyr Ala Pro Ile Gly Glu Val His Lys Asp Asp Lys

385									390				36571037 395				400		
Pro	Val	Lys	Cys	His 405	Gln	Tyr	Asp	Gly	Leu 410	Val	Glu	Leu	Ala	Thr 415	Ile				
Cys	Ala	Leu	Cys 420	Asn	Asp	Ser	Ala	Leu 425	Asp	Tyr	Asn	Glu	Ala 430	Lys	Gly				
Val	Tyr	Glu 435	Lys	Val	Gly	Glu	Ala 440	Thr	Glu	Thr	Ala	Leu 445	Thr	Cys	Leu				
Val	Glu 450	Lys	Met	Asn	Val	Phe 455	Asp	Thr	Glu	Leu	Lys 460	Gly	Leu	Ser	Lys				
Ile 465	Glu	Arg	Ala	Asn	Ala 470	Cys	Asn	Ser	Val	Ile 475	Lys	Gln	Leu	Met	Lys 480				
Lys	Glu	Phe	Thr	Leu 485	Glu	Phe	Ser	Arg	Asp 490	Arg	Lys	Ser	Met	Ser 495	Val				
Tyr	Cys	Thr	Pro 500	Asn	Lys	Pro	Ser	Arg 505	Thr	Ser	Met	Ser	Lys 510	Met	Phe				
Val	Lys	Gly 515	Ala	Pro	Glu	Gly	Val 520	Ile	Asp	Arg	Cys	Thr 525	His	Ile	Arg				
Val	Gly 530	Ser	Thr	Lys	Val	Pro 535	Met	Thr	Pro	Gly	Val 540	Lys	Gln	Lys	Ile				
Met 545	Ser	Val	Ile	Arg	Glu 550	Trp	Gly	Ser	Gly	Ser 555	Asp	Thr	Leu	Arg	Cys 560				
Leu	Ala	Leu	Ala	Thr 565	His	Asp	Asn	Pro	Met 570	Arg	Arg	Glu	Glu	Met 575	Asn				
Leu	Glu	Asp	Ser 580	Ala	Asn	Phe	Ile	Lys 585	Tyr	Glu	Thr	Asn	Leu 590	Thr	Phe				
Val	Gly	Cys 595	Val	Gly	Met	Leu	Asp 600	Pro	Pro	Arg	Ile	Glu 605	Val	Ala	Ser				
Ser	Val 610	Lys	Leu	Cys	Arg	Gln 615	Ala	Gly	Ile	Arg	Val 620	Ile	Met	Ile	Thr				
Gly 625	Asp	Asn	Lys	Gly	Thr 630	Ala	Val	Ala	Ile	Cys 635	Arg	Arg	Ile	Gly	Ile 640				
Phe	Gly	Gln	Asp	Glu 645	Asp	Val	Thr	Ser	Lys 650	Ala	Phe	Thr	Gly	Arg 655	Glu				
Phe	Asp	Glu	Leu 660	Asn	Pro	Ser	Ala	Gln 665	Arg	Glu	Ala	Cys	Leu 670	Asn	Ala				
Arg	Cys	Phe 675	Ala	Arg	Val	Glu	Pro 680	Ser	His	Lys	Ser	Lys 685	Ile	Val	Glu				
Phe	Leu 690	Gln	Ser	Phe	Asp	Glu 695	Ile	Thr	Ala	Met	Thr 700	Gly	Asp	Gly	Val				
Asn 705	Asp	Ala	Pro	Ala	Leu 710	Lys	Lys	Ser	Glu	Ile 715	Gly	Ile	Ala	Met	Gly 720				
Ser	Gly	Thr	Ala	Val	Ala	Lys	Thr	Ala	Ser	Glu	Met	Val	Leu	Ala	Asp				

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725	730	735
Asp Asn Phe Ser Thr Ile Val Ala Ala Val Glu Glu Gly Arg Ala Ile	740 745	750
Tyr Asn Asn Met Lys Gln Phe Ile Arg Tyr Leu Ile Ser Ser Asn Val	755 760	765
Gly Glu Val Val Cys Ile Phe Leu Thr Ala Ala Leu Gly Phe Pro Glu	770 775	780
Ala Leu Ile Pro Val Gln Leu Leu Trp Val Asn Leu Val Thr Asp Gly	785 790	795 800
Leu Pro Ala Thr Ala Leu Gly Phe Asn Pro Pro Asp Leu Asp Ile Met	805 810	815
Asn Lys Pro Pro Arg Asn Pro Lys Glu Pro Leu Ile Ser Gly Trp Leu	820 825	830
Phe Phe Arg Tyr Leu Ala Ile Gly Cys Tyr Val Gly Ala Ala Thr Val	835 840	845
Gly Ala Ala Ala Trp Trp Phe Ile Ala Ala Asp Gly Gly Pro Arg Val	850 855	860
Thr Phe Tyr Gln Leu Ser His Phe Leu Gln Cys Lys Glu Asp Asn Pro	865 870	875 880
Asp Phe Glu Gly Val Asp Cys Ala Val Phe Glu Ser Pro Tyr Pro Met	885 890	895
Thr Met Ala Leu Ser Val Leu Val Thr Ile Glu Met Cys Asn Ala Leu	900 905	910
Asn Ser Leu Ser Glu Asn Gln Ser Leu Leu Arg Met Pro Pro Trp Glu	915 920	925
Asn Ile Trp Leu Val Gly Ser Ile Cys Leu Ser Met Ser Leu His Phe	930 935	940
Leu Ile Leu Tyr Val Glu Pro Leu Pro Leu Ile Phe Gln Ile Thr Pro	945 950	955 960
Leu Asn Leu Thr Gln Trp Leu Met Val Leu Lys Ile Ser Leu Pro Val	965 970	975
Ile Leu Met Asp Glu Thr Leu Lys Phe Val Ala Arg Asn Tyr Leu Glu	980 985	990
Pro Gly Lys Glu Cys Val Gln Pro Ala Thr Lys Ser Cys Ser Phe Ser	995 1000	1005
Ala Cys Thr Asp Gly Ile Ser Trp Pro Phe Val Leu Leu Ile Met Pro	1010 1015	1020
Leu Val Val Trp Val Tyr Ser Thr Asp Thr Asn Phe Ser Asp Met Phe	1025 1030	1035 1040
Trp Ser		

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<210> 28

<211> 1042

<212> PRT

<213> Homo sapiens

<400> 28

Met Glu Asn Ala His Thr Lys Thr Val Glu Glu Val Leu Gly His Phe
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Gly Val Asn Glu Ser Thr Gly Leu Ser Leu Glu Gln Val Lys Lys Leu
20 25 30
Lys Glu Arg Trp Gly Ser Asn Glu Leu Pro Ala Glu Glu Gly Lys Thr
35 40 45
Leu Leu Glu Leu Val Ile Glu Gln Phe Glu Asp Leu Leu Val Arg Ile
50 55 60
Leu Leu Leu Ala Ala Cys Ile Ser Phe Val Leu Ala Trp Phe Glu Glu
65 70 75 80
Gly Glu Glu Thr Ile Thr Ala Phe Val Glu Pro Phe Val Ile Leu Leu
85 90 95
Ile Leu Val Ala Asn Ala Ile Val Gly Val Trp Gln Glu Arg Asn Ala
100 105 110
Glu Asn Ala Ile Glu Ala Leu Lys Glu Tyr Glu Pro Glu Met Gly Lys
115 120 125
Val Tyr Arg Gln Asp Arg Lys Ser Val Gln Arg Ile Lys Ala Lys Asp
130 135 140
Ile Val Pro Gly Asp Ile Val Glu Ile Ala Val Gly Asp Lys Val Pro
145 150 155 160
Ala Asp Ile Arg Leu Thr Ser Ile Lys Ser Thr Thr Leu Arg Val Asp
165 170 175
Gln Ser Ile Leu Thr Gly Glu Ser Val Ser Val Ile Lys His Thr Asp
180 185 190
Pro Val Pro Asp Pro Arg Ala Val Asn Gln Asp Lys Lys Asn Met Leu
195 200 205
Phe Ser Gly Thr Asn Ile Ala Ala Gly Lys Ala Met Gly Val Val Val
210 215 220
Ala Thr Gly Val Asn Thr Glu Ile Gly Lys Ile Arg Asp Glu Met Val
225 230 235 240
Ala Thr Glu Gln Glu Arg Thr Pro Leu Gln Gln Lys Leu Asp Glu Phe
245 250 255
Gly Glu Gln Leu Ser Lys Val Ile Ser Leu Ile Cys Ile Ala Val Trp
260 265 270
Ile Ile Asn Ile Gly His Phe Asn Asp Pro Val His Gly Gly Ser Trp
275 280 285
Ile Arg Gly Ala Ile Tyr Tyr Phe Lys Ile Ala Val Ala Leu Ala Val
290 295 300

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Ala	Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ala	Val	Ile	Thr	Thr	Cys	Leu	Ala
305					310					315					320
Leu	Gly	Thr	Arg	Arg	Met	Ala	Lys	Lys	Asn	Ala	Ile	Val	Arg	Ser	Leu
				325					330					335	
Pro	Ser	Val	Glu	Thr	Leu	Gly	Cys	Thr	Ser	Val	Ile	Cys	Ser	Asp	Lys
			340					345					350		
Thr	Gly	Thr	Leu	Thr	Thr	Asn	Gln	Met	Ser	Val	Cys	Arg	Met	Phe	Ile
		355					360					365			
Leu	Asp	Arg	Val	Glu	Gly	Asp	Thr	Cys	Ser	Leu	Asn	Glu	Phe	Thr	Ile
	370					375					380				
Thr	Gly	Ser	Thr	Tyr	Ala	Pro	Ile	Gly	Glu	Val	His	Lys	Asp	Asp	Lys
385					390					395					400
Pro	Val	Asn	Cys	His	Gln	Tyr	Asp	Gly	Leu	Val	Glu	Leu	Ala	Thr	Ile
				405					410					415	
Cys	Ala	Leu	Cys	Asn	Asp	Ser	Ala	Leu	Asp	Tyr	Asn	Glu	Ala	Lys	Gly
			420					425					430		
Val	Tyr	Glu	Lys	Val	Gly	Glu	Ala	Thr	Glu	Thr	Ala	Leu	Thr	Cys	Leu
		435					440					445			
Val	Glu	Lys	Met	Asn	Val	Phe	Asp	Thr	Glu	Leu	Lys	Gly	Leu	Ser	Lys
	450					455					460				
Ile	Glu	Arg	Ala	Asn	Ala	Cys	Asn	Ser	Val	Ile	Lys	Gln	Leu	Met	Lys
465					470					475					480
Lys	Glu	Phe	Thr	Leu	Glu	Phe	Ser	Arg	Asp	Arg	Lys	Ser	Met	Ser	Val
				485					490					495	
Tyr	Cys	Thr	Pro	Asn	Lys	Pro	Ser	Arg	Thr	Ser	Met	Ser	Lys	Met	Phe
			500					505					510		
Val	Lys	Gly	Ala	Pro	Glu	Gly	Val	Ile	Asp	Arg	Cys	Thr	His	Ile	Arg
		515					520					525			
Val	Gly	Ser	Thr	Lys	Val	Pro	Met	Thr	Ser	Gly	Val	Lys	Gln	Lys	Ile
	530					535					540				
Met	Ser	Val	Ile	Arg	Glu	Trp	Gly	Ser	Gly	Ser	Asp	Thr	Leu	Arg	Cys
545					550					555					560
Leu	Ala	Leu	Ala	Thr	His	Asp	Asn	Pro	Leu	Arg	Arg	Glu	Glu	Met	His
				565					570					575	
Leu	Glu	Asp	Ser	Ala	Asn	Phe	Ile	Lys	Tyr	Glu	Thr	Asn	Leu	Thr	Phe
			580					585					590		
Val	Gly	Cys	Val	Gly	Met	Leu	Asp	Pro	Pro	Arg	Ile	Glu	Val	Ala	Ser
		595					600					605			
Ser	Val	Lys	Leu	Cys	Arg	Gln	Ala	Gly	Ile	Arg	Val	Ile	Met	Ile	Thr
	610					615					620				
Gly	Asp	Asn	Lys	Gly	Thr	Ala	Val	Ala	Ile	Cys	Arg	Arg	Ile	Gly	Ile
625					630					635					640

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Phe	Gly	Gln	Asp	Glu 645	Asp	Val	Thr	Ser	Lys 650	Ala	Phe	Thr	Gly	Arg 655	Glu
Phe	Asp	Glu	Leu 660	Asn	Pro	Ser	Ala	Gln 665	Arg	Asp	Ala	Cys	Leu 670	Asn	Ala
Arg	Cys	Phe 675	Ala	Arg	Val	Glu	Pro 680	Ser	His	Lys	Ser	Lys 685	Ile	Val	Glu
Phe	Leu 690	Gln	Ser	Phe	Asp	Glu 695	Ile	Thr	Ala	Met	Thr 700	Gly	Asp	Gly	Val
Asn 705	Asp	Ala	Pro	Ala	Leu 710	Lys	Lys	Ala	Glu	Ile 715	Gly	Ile	Ala	Met	Gly 720
Ser	Gly	Thr	Ala	Val 725	Ala	Lys	Thr	Ala	Ser 730	Glu	Met	Val	Leu	Ala 735	Asp
Asp	Asn	Phe	Ser 740	Thr	Ile	Val	Ala	Ala 745	Val	Glu	Glu	Gly	Arg 750	Ala	Ile
Tyr	Asn	Asn 755	Met	Lys	Gln	Phe	Ile 760	Arg	Tyr	Leu	Ile	Ser 765	Ser	Asn	Val
Gly	Glu 770	Val	Val	Cys	Ile	Phe 775	Leu	Thr	Ala	Ala	Leu 780	Gly	Phe	Pro	Glu
Ala 785	Leu	Ile	Pro	Val	Gln 790	Leu	Leu	Trp	Val	Asn 795	Leu	Val	Thr	Asp	Gly 800
Leu	Pro	Ala	Thr	Ala 805	Leu	Gly	Phe	Asn	Pro 810	Pro	Asp	Leu	Asp	Ile 815	Met
Asn	Lys	Pro	Pro 820	Arg	Asn	Pro	Lys	Glu 825	Pro	Leu	Ile	Ser	Gly 830	Trp	Leu
Phe	Phe	Arg 835	Tyr	Leu	Ala	Ile	Gly 840	Cys	Tyr	Val	Gly	Ala 845	Ala	Thr	Val
Gly	Ala 850	Ala	Ala	Trp	Trp	Phe 855	Ile	Ala	Ala	Asp	Gly 860	Gly	Pro	Arg	Val
Ser 865	Phe	Tyr	Gln	Leu	Ser 870	His	Phe	Leu	Gln	Cys 875	Lys	Glu	Asp	Asn	Pro 880
Asp	Phe	Glu	Gly	Val 885	Asp	Cys	Ala	Ile	Phe 890	Glu	Ser	Pro	Tyr	Pro 895	Met
Thr	Met	Ala	Leu 900	Ser	Val	Leu	Val	Thr 905	Ile	Glu	Met	Cys	Asn 910	Ala	Leu
Asn	Ser	Leu 915	Ser	Glu	Asn	Gln	Ser 920	Leu	Leu	Arg	Met	Pro 925	Pro	Trp	Glu
Asn	Ile 930	Trp	Leu	Val	Gly	Ser 935	Ile	Cys	Leu	Ser	Met 940	Ser	Leu	His	Phe
Leu 945	Ile	Leu	Tyr	Val	Glu 950	Pro	Leu	Pro	Leu	Ile 955	Phe	Gln	Ile	Thr	Pro 960
Leu	Asn	Val	Thr	Gln 965	Trp	Leu	Met	Val	Leu 970	Lys	Ile	Ser	Leu	Pro 975	Val

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 Pro Gly Lys Glu Cys Val Gln Pro Ala Thr Lys Ser Cys Ser Phe Ser
 995 1000 1005
 Ala Cys Thr Asp Gly Ile Ser Trp Pro Phe Val Leu Leu Ile Met Pro
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 Leu Leu Glu Leu Val Ile Glu Gln Phe Glu Asp Leu Leu Val Arg Ile
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 Gly Glu Glu Thr Ile Thr Ala Phe Val Glu Pro Phe Val Ile Leu Leu
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 Glu Asn Ala Ile Glu Ala Leu Lys Glu Tyr Glu Pro Glu Met Gly Lys
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 Val Tyr Arg Gln Asp Arg Lys Ser Val Gln Arg Ile Lys Ala Lys Asp
 130 135 140
 Ile Val Pro Gly Asp Ile Val Glu Ile Ala Val Gly Asp Lys Val Pro
 145 150 155 160
 Ala Asp Ile Arg Leu Thr Ser Ile Lys Ser Thr Thr Leu Arg Val Asp
 165 170 175
 Gln Ser Ile Leu Thr Gly Glu Ser Val Ser Val Ile Lys His Thr Asp
 180 185 190
 Pro Val Pro Asp Pro Arg Ala Val Asn Gln Asp Lys Lys Asn Met Leu
 195 200 205
 Phe Ser Gly Thr Asn Ile Ala Ala Gly Lys Ala Met Gly Val Val Val
 210 215 220

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Ala 225	Thr	Gly	Val	Asn 230	Thr	Glu	Ile	Gly	Lys	Ile 235	Arg	Asp	Glu	Met	Val 240
Ala	Thr	Glu	Gln	Glu 245	Arg	Thr	Pro	Leu	Gln 250	Gln	Lys	Leu	Asp	Glu 255	Phe
Gly	Glu	Gln	Leu 260	Ser	Lys	Val	Ile	Ser 265	Leu	Ile	Cys	Ile	Ala 270	Val	Trp
Ile	Ile	Asn 275	Ile	Gly	His	Phe	Asn 280	Asp	Pro	Val	His	Gly 285	Gly	Ser	Trp
Ile	Arg 290	Gly	Ala	Ile	Tyr	Tyr 295	Phe	Lys	Ile	Ala	Val 300	Ala	Leu	Ala	Val
Ala 305	Ala	Ile	Pro	Glu	Gly 310	Leu	Pro	Ala	Val	Ile 315	Thr	Thr	Cys	Leu	Ala 320
Leu	Gly	Thr	Arg	Arg 325	Met	Ala	Lys	Lys	Asn 330	Ala	Ile	Val	Arg	Ser 335	Leu
Pro	Ser	Val	Glu 340	Thr	Leu	Gly	Cys	Thr 345	Ser	Val	Ile	Cys	Ser 350	Asp	Lys
Thr	Gly	Thr 355	Leu	Thr	Thr	Asn	Gln 360	Met	Ser	Val	Cys	Arg 365	Met	Phe	Ile
Leu	Asp 370	Arg	Val	Glu	Gly	Asp 375	Thr	Cys	Ser	Leu	Asn 380	Glu	Phe	Thr	Ile
Thr 385	Gly	Ser	Thr	Tyr	Ala 390	Pro	Ile	Gly	Glu	Val 395	His	Lys	Asp	Asp	Lys 400
Pro	Val	Asn	Cys	His 405	Gln	Tyr	Asp	Gly	Leu 410	Val	Glu	Leu	Ala	Thr 415	Ile
Cys	Ala	Leu	Cys 420	Asn	Asp	Ser	Ala	Leu 425	Asp	Tyr	Asn	Glu	Ala 430	Lys	Gly
Val	Tyr	Glu 435	Lys	Val	Gly	Glu	Ala 440	Thr	Glu	Thr	Ala	Leu 445	Thr	Cys	Leu
Val	Glu 450	Lys	Met	Asn	Val	Phe 455	Asp	Thr	Glu	Leu	Lys 460	Gly	Leu	Ser	Lys
Ile 465	Glu	Arg	Ala	Asn	Ala 470	Cys	Asn	Ser	Val	Ile 475	Lys	Gln	Leu	Met	Lys 480
Lys	Glu	Phe	Thr	Leu 485	Glu	Phe	Ser	Arg	Asp 490	Arg	Lys	Ser	Met	Ser 495	Val
Tyr	Cys	Thr	Pro 500	Asn	Lys	Pro	Ser	Arg 505	Thr	Ser	Met	Ser	Lys 510	Met	Phe
Val	Lys	Gly 515	Ala	Pro	Glu	Gly	Val 520	Ile	Asp	Arg	Cys	Thr 525	His	Ile	Arg
Val	Gly 530	Ser	Thr	Lys	Val	Pro 535	Met	Thr	Ser	Gly	Val 540	Lys	Gln	Lys	Ile
Met 545	Ser	Val	Ile	Arg	Glu 550	Trp	Gly	Ser	Gly	Ser 555	Asp	Thr	Leu	Arg	Cys 560

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Val	Gly	Cys 595	Val	Gly	Met	Leu	Asp 600	Pro	Pro	Arg	Ile	Glu 605	Val	Ala	Ser	
Ser	Val 610	Lys	Leu	Cys	Arg	Gln 615	Ala	Gly	Ile	Arg	Val 620	Ile	Met	Ile	Thr	
Gly 625	Asp	Asn	Lys	Gly	Thr 630	Ala	Val	Ala	Ile	Cys 635	Arg	Arg	Ile	Gly	Ile 640	
Phe	Gly	Gln	Asp	Glu 645	Asp	Val	Thr	Ser	Lys 650	Ala	Phe	Thr	Gly	Arg 655	Glu	
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Asp	Asn	Phe	Ser 740	Thr	Ile	Val	Ala	Ala 745	Val	Glu	Glu	Gly	Arg 750	Ala	Ile	
Tyr	Asn	Asn 755	Met	Lys	Gln	Phe	Ile 760	Arg	Tyr	Leu	Ile	Ser 765	Ser	Asn	Val	
Gly	Glu 770	Val	Val	Cys	Ile	Phe 775	Leu	Thr	Ala	Ala	Leu 780	Gly	Phe	Pro	Glu	
Ala 785	Leu	Ile	Pro	Val	Gln 790	Leu	Leu	Trp	Val	Asn 795	Leu	Val	Thr	Asp	Gly 800	
Leu	Pro	Ala	Thr	Ala 805	Leu	Gly	Phe	Asn	Pro 810	Pro	Asp	Leu	Asp	Ile 815	Met	
Asn	Lys	Pro	Pro 820	Arg	Asn	Pro	Lys	Glu 825	Pro	Leu	Ile	Ser	Gly 830	Trp	Leu	
Phe	Phe	Arg 835	Tyr	Leu	Ala	Ile	Gly 840	Cys	Tyr	Val	Gly	Ala 845	Ala	Thr	Val	
Gly	Ala 850	Ala	Ala	Trp	Trp	Phe 855	Ile	Ala	Ala	Asp	Gly 860	Gly	Pro	Arg	Val	
Ser 865	Phe	Tyr	Gln	Leu	Ser 870	His	Phe	Leu	Gln	Cys 875	Lys	Glu	Asp	Asn	Pro 880	
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Thr Met Ala Leu Ser Val Leu Val Thr Ile Glu Met Cys Asn Ala Leu
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Asn Ser Leu Ser Glu Asn Gln Ser Leu Leu Arg Met Pro Pro Trp Glu
915 920 925
Asn Ile Trp Leu Val Gly Ser Ile Cys Leu Ser Met Ser Leu His Phe
930 935 940
Leu Ile Leu Tyr Val Glu Pro Leu Pro Leu Ile Phe Gln Ile Thr Pro
945 950 955 960
Leu Asn Val Thr Gln Trp Leu Met Val Leu Lys Ile Ser Leu Pro Val
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Leu Leu Glu Leu Val Ile Glu Gln Phe Glu Asp Leu Leu Val Arg Ile
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Gly Glu Glu Thr Ile Thr Ala Phe Val Glu Pro Phe Val Ile Leu Leu
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Ile Leu Val Ala Asn Ala Ile Val Gly Val Trp Gln Glu Arg Asn Ala
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Glu Asn Ala Ile Glu Ala Leu Lys Glu Tyr Glu Pro Glu Met Gly Lys
115 120 125
Val Tyr Arg Gln Asp Arg Lys Ser Val Gln Arg Ile Lys Ala Lys Asp
130 135 140
Ile Val Pro Gly Asp Ile Val Glu Ile Ala Val Gly Asp Lys Val Pro
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Ala Asp Ile Arg Leu Thr Ser Ile Lys Ser Thr Thr Leu Arg Val Asp
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Gln Ser Ile Leu Thr Gly Glu Ser Val Ser Val Ile Lys His Thr Asp

36571037

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Phe	Ser	Gly	Thr	Asn	Ile	Ala	Ala	Gly	Lys	Ala	Met	Gly	Val	Val	Val
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Ala	Thr	Glu	Gln	Glu	Arg	Thr	Pro	Leu	Gln	Gln	Lys	Leu	Asp	Glu	Phe
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Gly	Glu	Gln	Leu	Ser	Lys	Val	Ile	Ser	Leu	Ile	Cys	Ile	Ala	Val	Trp
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Ile	Ile	Asn	Ile	Gly	His	Phe	Asn	Asp	Pro	Val	His	Gly	Gly	Ser	Trp
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Ile	Arg	Gly	Ala	Ile	Tyr	Tyr	Phe	Lys	Ile	Ala	Val	Ala	Leu	Ala	Val
	290					295					300				
Ala	Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ala	Val	Ile	Thr	Thr	Cys	Leu	Ala
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Leu	Gly	Thr	Arg	Arg	Met	Ala	Lys	Lys	Asn	Ala	Ile	Val	Arg	Ser	Leu
				325					330					335	
Pro	Ser	Val	Glu	Thr	Leu	Gly	Cys	Thr	Ser	Val	Ile	Cys	Ser	Asp	Lys
			340					345					350		
Thr	Gly	Thr	Leu	Thr	Thr	Asn	Gln	Met	Ser	Val	Cys	Arg	Met	Phe	Ile
		355					360					365			
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	370					375					380				
Thr	Gly	Ser	Thr	Tyr	Ala	Pro	Ile	Gly	Glu	Val	His	Lys	Asp	Asp	Lys
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Pro	Val	Asn	Cys	His	Gln	Tyr	Asp	Gly	Leu	Val	Glu	Leu	Ala	Thr	Ile
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Cys	Ala	Leu	Cys	Asn	Asp	Ser	Ala	Leu	Asp	Tyr	Asn	Glu	Ala	Lys	Gly
			420					425					430		
Val	Tyr	Glu	Lys	Val	Gly	Glu	Ala	Thr	Glu	Thr	Ala	Leu	Thr	Cys	Leu
		435					440					445			
Val	Glu	Lys	Met	Asn	Val	Phe	Asp	Thr	Glu	Leu	Lys	Gly	Leu	Ser	Lys
	450					455					460				
Ile	Glu	Arg	Ala	Asn	Ala	Cys	Asn	Ser	Val	Ile	Lys	Gln	Leu	Met	Lys
465					470					475					480
Lys	Glu	Phe	Thr	Leu	Glu	Phe	Ser	Arg	Asp	Arg	Lys	Ser	Met	Ser	Val
				485					490					495	
Tyr	Cys	Thr	Pro	Asn	Lys	Pro	Ser	Arg	Thr	Ser	Met	Ser	Lys	Met	Phe
			500					505					510		
Val	Lys	Gly	Ala	Pro	Glu	Gly	Val	Ile	Asp	Arg	Cys	Thr	His	Ile	Arg

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Met	Ser	Val	Ile	Arg	Glu	Trp	Gly	Ser	Gly	Ser	Asp	Thr	Leu	Arg	Cys
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Leu	Ala	Leu	Ala	Thr	His	Asp	Asn	Pro	Leu	Arg	Arg	Glu	Glu	Met	His
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Leu	Glu	Asp	Ser	Ala	Asn	Phe	Ile	Lys	Tyr	Glu	Thr	Asn	Leu	Thr	Phe
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Val	Gly	Cys	Val	Gly	Met	Leu	Asp	Pro	Pro	Arg	Ile	Glu	Val	Ala	Ser
		595					600					605			
Ser	Val	Lys	Leu	Cys	Arg	Gln	Ala	Gly	Ile	Arg	Val	Ile	Met	Ile	Thr
	610					615					620				
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Phe	Gly	Gln	Asp	Glu	Asp	Val	Thr	Ser	Lys	Ala	Phe	Thr	Gly	Arg	Glu
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Phe	Asp	Glu	Leu	Asn	Pro	Ser	Ala	Gln	Arg	Asp	Ala	Cys	Leu	Asn	Ala
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Arg	Cys	Phe	Ala	Arg	Val	Glu	Pro	Ser	His	Lys	Ser	Lys	Ile	Val	Glu
		675					680					685			
Phe	Leu	Gln	Ser	Phe	Asp	Glu	Ile	Thr	Ala	Met	Thr	Gly	Asp	Gly	Val
	690					695					700				
Asn	Asp	Ala	Pro	Ala	Leu	Lys	Lys	Ala	Glu	Ile	Gly	Ile	Ala	Met	Gly
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Ser	Gly	Thr	Ala	Val	Ala	Lys	Thr	Ala	Ser	Glu	Met	Val	Leu	Ala	Asp
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Asp	Asn	Phe	Ser	Thr	Ile	Val	Ala	Ala	Val	Glu	Glu	Gly	Arg	Ala	Ile
			740					745					750		
Tyr	Asn	Asn	Met	Lys	Gln	Phe	Ile	Arg	Tyr	Leu	Ile	Ser	Ser	Asn	Val
		755					760					765			
Gly	Glu	Val	Val	Cys	Ile	Phe	Leu	Thr	Ala	Ala	Leu	Gly	Phe	Pro	Glu
	770					775					780				
Ala	Leu	Ile	Pro	Val	Gln	Leu	Leu	Trp	Val	Asn	Leu	Val	Thr	Asp	Gly
785					790					795					800
Leu	Pro	Ala	Thr	Ala	Leu	Gly	Phe	Asn	Pro	Pro	Asp	Leu	Asp	Ile	Met
				805					810					815	
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Phe	Phe	Arg	Tyr	Leu	Ala	Ile	Gly	Cys	Tyr	Val	Gly	Ala	Ala	Thr	Val
		835					840					845			
Gly	Ala	Ala	Ala	Trp	Trp	Phe	Ile	Ala	Ala	Asp	Gly	Gly	Pro	Arg	Val

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 Asp Phe Glu Gly Val Asp Cys Ala Ile Phe Glu Ser Pro Tyr Pro Met
 885 890 895
 Thr Met Ala Leu Ser Val Leu Val Thr Ile Glu Met Cys Asn Ala Leu
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 Asn Ser Leu Ser Glu Asn Gln Ser Leu Leu Arg Met Pro Pro Trp Glu
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 Asn Ile Trp Leu Val Gly Ser Ile Cys Leu Ser Met Ser Leu His Phe
 930 935 940
 Leu Ile Leu Tyr Val Glu Pro Leu Pro Leu Ile Phe Gln Ile Thr Pro
 945 950 955 960
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 Leu Leu Glu Leu Val Ile Glu Gln Phe Glu Asp Leu Leu Val Arg Ile
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 Leu Leu Leu Ala Ala Cys Ile Ser Phe Val Leu Ala Trp Phe Glu Glu
 65 70 75 80
 Gly Glu Glu Thr Ile Thr Ala Phe Val Glu Pro Phe Val Ile Leu Leu
 85 90 95
 Ile Leu Val Ala Asn Ala Ile Val Gly Val Trp Gln Glu Arg Asn Ala
 100 105 110
 Glu Asn Ala Ile Glu Ala Leu Lys Glu Tyr Glu Pro Glu Met Gly Lys
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 Val Tyr Arg Gln Asp Arg Lys Ser Val Gln Arg Ile Lys Ala Lys Asp
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Ala	Asp	Ile	Arg	Leu 165	Thr	Ser	Ile	Lys	Ser 170	Thr	Thr	Leu	Arg	Val 175	Asp
Gln	Ser	Ile	Leu 180	Thr	Gly	Glu	Ser	Val 185	Ser	Val	Ile	Lys	His 190	Thr	Asp
Pro	Val	Pro 195	Asp	Pro	Arg	Ala	Val 200	Asn	Gln	Asp	Lys	Lys 205	Asn	Met	Leu
Phe	Ser 210	Gly	Thr	Asn	Ile	Ala 215	Ala	Gly	Lys	Ala	Met 220	Gly	Val	Val	Val
Ala 225	Thr	Gly	Val	Asn	Thr 230	Glu	Ile	Gly	Lys	Ile 235	Arg	Asp	Glu	Met	Val 240
Ala	Thr	Glu	Gln	Glu 245	Arg	Thr	Pro	Leu	Gln 250	Gln	Lys	Leu	Asp	Glu 255	Phe
Gly	Glu	Gln	Leu 260	Ser	Lys	Val	Ile	Ser 265	Leu	Ile	Cys	Ile	Ala 270	Val	Trp
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Ala 305	Ala	Ile	Pro	Glu	Gly 310	Leu	Pro	Ala	Val	Ile 315	Thr	Thr	Cys	Leu	Ala 320
Leu	Gly	Thr	Arg	Arg 325	Met	Ala	Lys	Lys	Asn 330	Ala	Ile	Val	Arg	Ser 335	Leu
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Leu	Asp 370	Lys	Val	Asp	Gly	Asp 375	Thr	Cys	Ser	Leu	Asn 380	Glu	Phe	Thr	Ile
Thr 385	Gly	Ser	Thr	Tyr	Ala 390	Pro	Ile	Gly	Glu	Val 395	His	Lys	Asp	Asp	Lys 400
Pro	Val	Lys	Cys	His 405	Gln	Tyr	Asp	Gly	Leu 410	Val	Glu	Leu	Ala	Thr 415	Ile
Cys	Ala	Leu	Cys 420	Asn	Asp	Ser	Ala	Leu 425	Asp	Tyr	Asn	Glu	Ala 430	Lys	Gly
Val	Tyr	Glu 435	Lys	Val	Gly	Glu	Ala 440	Thr	Glu	Thr	Ala	Leu 445	Thr	Cys	Leu
Val	Glu 450	Lys	Met	Asn	Val	Phe 455	Asp	Thr	Glu	Leu	Lys 460	Gly	Leu	Ser	Lys
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 Tyr Cys Thr Pro Asn Lys Pro Ser Arg Thr Ser Met Ser Lys Met Phe
 500 505 510
 Val Lys Gly Ala Pro Glu Gly Val Ile Asp Arg Cys Thr His Ile Arg
 515 520 525
 Val Gly Ser Thr Lys Val Pro Met Thr Ala Gly Val Lys Gln Lys Ile
 530 535 540
 Met Ser Val Ile Arg Glu Trp Gly Ser Gly Ser Asp Thr Leu Arg Cys
 545 550 555 560
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 565 570 575
 Leu Lys Asp Ser Ala Asn Phe Ile Lys Tyr Glu Thr Asn Leu Thr Phe
 580 585 590
 Val Gly Cys Val Gly Met Leu Asp Pro Pro Arg Ile Glu Val Ala Ser
 595 600 605
 Ser Val Lys Leu Cys Arg Gln Ala Gly Ile Arg Val Ile Met Ile Thr
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 Gly Asp Asn Lys Gly Thr Ala Val Ala Ile Cys Arg Arg Ile Gly Ile
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 Phe Gly Gln Glu Glu Asp Val Thr Ala Lys Ala Phe Thr Gly Arg Glu
 645 650 655
 Phe Asp Glu Leu Asn Pro Ser Ala Gln Arg Asp Ala Cys Leu Asn Ala
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 Arg Cys Phe Ala Arg Val Glu Pro Ser His Lys Ser Lys Ile Val Glu
 675 680 685
 Phe Leu Gln Ser Phe Asp Glu Ile Thr Ala Met Thr Gly Asp Gly Val
 690 695 700
 Asn Asp Ala Pro Ala Leu Lys Lys Ala Glu Ile Gly Ile Ala Met Gly
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 Ser Gly Thr Ala Val Ala Lys Thr Ala Ser Glu Met Val Leu Ala Asp
 725 730 735
 Asp Asn Phe Ser Thr Ile Val Ala Ala Val Glu Glu Gly Arg Ala Ile
 740 745 750
 Tyr Asn Asn Met Lys Gln Phe Ile Arg Tyr Leu Ile Ser Ser Asn Val
 755 760 765
 Gly Glu Val Val Cys Ile Phe Leu Thr Ala Ala Leu Gly Phe Pro Glu
 770 775 780
 Ala Leu Ile Pro Val Gln Leu Leu Trp Val Asn Leu Val Thr Asp Gly
 785 790 795 800
 Leu Pro Ala Thr Ala Leu Gly Phe Asn Pro Pro Asp Leu Asp Ile Met
 805 810 815

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Asn Lys Pro Pro Arg Asn Pro Lys Glu Pro Leu Ile Ser Gly Trp Leu
820 825 830

Phe Phe Arg Tyr Leu Ala Ile Gly Cys Tyr Val Gly Ala Ala Thr Val
835 840 845

Gly Ala Ala Ala Trp Trp Phe Ile Ala Ala Asp Gly Gly Pro Arg Val
850 855 860

Ser Phe Tyr Gln Leu Ser His Phe Leu Gln Cys Lys Glu Asp Asn Pro
865 870 875 880

Asp Phe Glu Gly Val Asp Cys Ala Ile Phe Glu Ser Pro Tyr Pro Met
885 890 895

Thr Met Ala Leu Ser Val Leu Val Thr Ile Glu Met Cys Asn Ala Leu
900 905 910

Asn Ser Leu Ser Glu Asn Gln Ser Leu Leu Arg Met Pro Pro Trp Glu
915 920 925

Asn Ile Trp Leu Val Gly Ser Ile Cys Leu Ser Met Ser Leu His Phe
930 935 940

Leu Ile Leu Tyr Val Glu Pro Leu Pro Leu Ile Phe Gln Ile Thr Pro
945 950 955 960

Leu Asn Val Thr Gln Trp Leu Met Val Leu Lys Ile Ser Leu Pro Val
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Ile Leu Met Asp Glu Thr Leu Lys Phe Val Ala Arg Asn Tyr Leu Glu
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Pro Ala Ile Leu Glu
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<400> 32
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Gly Val Asn Glu Ser Thr Gly Leu Ser Leu Glu Gln Val Lys Lys Leu
20 25 30

Lys Glu Arg Trp Gly Ser Asn Glu Leu Pro Ala Glu Glu Gly Lys Thr
35 40 45

Leu Leu Glu Leu Val Ile Glu Gln Phe Glu Asp Leu Leu Val Arg Ile
50 55 60

Leu Leu Leu Ala Ala Cys Ile Ser Phe Val Leu Ala Trp Phe Glu Glu
65 70 75 80

Gly Glu Glu Thr Ile Thr Ala Phe Val Glu Pro Phe Val Ile Leu Leu
85 90 95

Ile Leu Val Ala Asn Ala Ile Val Gly Val Trp Gln Glu Arg Asn Ala
100 105 110

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Glu	Asn	Ala	Ile	Glu	Ala	Leu	Lys	Glu	Tyr	Glu	Pro	Glu	Met	Gly	Lys
		115					120					125			
Val	Tyr	Arg	Gln	Asp	Arg	Lys	Ser	Val	Gln	Arg	Ile	Lys	Ala	Lys	Asp
	130					135					140				
Ile	Val	Pro	Gly	Asp	Ile	Val	Glu	Ile	Ala	Val	Gly	Asp	Lys	Val	Pro
145					150					155					160
Ala	Asp	Ile	Arg	Leu	Thr	Ser	Ile	Lys	Ser	Thr	Thr	Leu	Arg	Val	Asp
				165					170					175	
Gln	Ser	Ile	Leu	Thr	Gly	Glu	Ser	Val	Ser	Val	Ile	Lys	His	Thr	Asp
			180					185					190		
Pro	Val	Pro	Asp	Pro	Arg	Ala	Val	Asn	Gln	Asp	Lys	Lys	Asn	Met	Leu
		195					200					205			
Phe	Ser	Gly	Thr	Asn	Ile	Ala	Ala	Gly	Lys	Ala	Met	Gly	Val	Val	Val
	210					215					220				
Ala	Thr	Gly	Val	Asn	Thr	Glu	Ile	Gly	Lys	Ile	Arg	Asp	Glu	Met	Val
225					230					235					240
Ala	Thr	Glu	Gln	Glu	Arg	Thr	Pro	Leu	Gln	Gln	Lys	Leu	Asp	Glu	Phe
				245					250					255	
Gly	Glu	Gln	Leu	Ser	Lys	Val	Ile	Ser	Leu	Ile	Cys	Ile	Ala	Val	Trp
			260					265					270		
Ile	Ile	Asn	Ile	Gly	His	Phe	Asn	Asp	Pro	Val	His	Gly	Gly	Ser	Trp
		275					280					285			
Ile	Arg	Gly	Ala	Ile	Tyr	Tyr	Phe	Lys	Ile	Ala	Val	Ala	Leu	Ala	Val
	290					295					300				
Ala	Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ala	Val	Ile	Thr	Thr	Cys	Leu	Ala
305					310					315					320
Leu	Gly	Thr	Arg	Arg	Met	Ala	Lys	Lys	Asn	Ala	Ile	Val	Arg	Ser	Leu
				325					330					335	
Pro	Ser	Val	Glu	Thr	Leu	Gly	Cys	Thr	Ser	Val	Ile	Cys	Ser	Asp	Lys
			340					345					350		
Thr	Gly	Thr	Leu	Thr	Thr	Asn	Gln	Met	Ser	Val	Cys	Arg	Met	Phe	Ile
		355					360					365			
Leu	Asp	Lys	Val	Asp	Gly	Asp	Thr	Cys	Ser	Leu	Asn	Glu	Phe	Thr	Ile
	370					375					380				
Thr	Gly	Ser	Thr	Tyr	Ala	Pro	Ile	Gly	Glu	Val	His	Lys	Asp	Asp	Lys
385					390					395					400
Pro	Val	Lys	Cys	His	Gln	Tyr	Asp	Gly	Leu	Val	Glu	Leu	Ala	Thr	Ile
				405					410					415	
Cys	Ala	Leu	Cys	Asn	Asp	Ser	Ala	Leu	Asp	Tyr	Asn	Glu	Ala	Lys	Gly
			420					425					430		
Val	Tyr	Glu	Lys	Val	Gly	Glu	Ala	Thr	Glu	Thr	Ala	Leu	Thr	Cys	Leu
		435					440					445			

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Val	Glu	Lys	Met	Asn	Val	Phe	Asp	Thr	Glu	Leu	Lys	Gly	Leu	Ser	Lys
	450					455					460				
Ile	Glu	Arg	Ala	Asn	Ala	Cys	Asn	Ser	Val	Ile	Lys	Gln	Leu	Met	Lys
465					470					475					480
Lys	Glu	Phe	Thr	Leu	Glu	Phe	Ser	Arg	Asp	Arg	Lys	Ser	Met	Ser	Val
				485					490					495	
Tyr	Cys	Thr	Pro	Asn	Lys	Pro	Ser	Arg	Thr	Ser	Met	Ser	Lys	Met	Phe
			500					505					510		
Val	Lys	Gly	Ala	Pro	Glu	Gly	Val	Ile	Asp	Arg	Cys	Thr	His	Ile	Arg
		515					520					525			
Val	Gly	Ser	Thr	Lys	Val	Pro	Met	Thr	Ala	Gly	Val	Lys	Gln	Lys	Ile
	530					535					540				
Met	Ser	Val	Ile	Arg	Glu	Trp	Gly	Ser	Gly	Ser	Asp	Thr	Leu	Arg	Cys
545					550					555					560
Leu	Ala	Leu	Ala	Thr	His	Asp	Asn	Pro	Leu	Arg	Arg	Glu	Glu	Met	His
				565					570					575	
Leu	Lys	Asp	Ser	Ala	Asn	Phe	Ile	Lys	Tyr	Glu	Thr	Asn	Leu	Thr	Phe
			580					585					590		
Val	Gly	Cys	Val	Gly	Met	Leu	Asp	Pro	Pro	Arg	Ile	Glu	Val	Ala	Ser
		595					600					605			
Ser	Val	Lys	Leu	Cys	Arg	Gln	Ala	Gly	Ile	Arg	Val	Ile	Met	Ile	Thr
	610					615					620				
Gly	Asp	Asn	Lys	Gly	Thr	Ala	Val	Ala	Ile	Cys	Arg	Arg	Ile	Gly	Ile
625					630					635					640
Phe	Gly	Gln	Glu	Glu	Asp	Val	Thr	Ala	Lys	Ala	Phe	Thr	Gly	Arg	Glu
				645					650					655	
Phe	Asp	Glu	Leu	Asn	Pro	Ser	Ala	Gln	Arg	Asp	Ala	Cys	Leu	Asn	Ala
			660					665					670		
Arg	Cys	Phe	Ala	Arg	Val	Glu	Pro	Ser	His	Lys	Ser	Lys	Ile	Val	Glu
		675					680					685			
Phe	Leu	Gln	Ser	Phe	Asp	Glu	Ile	Thr	Ala	Met	Thr	Gly	Asp	Gly	Val
	690					695					700				
Asn	Asp	Ala	Pro	Ala	Leu	Lys	Lys	Ala	Glu	Ile	Gly	Ile	Ala	Met	Gly
705					710					715					720
Ser	Gly	Thr	Ala	Val	Ala	Lys	Thr	Ala	Ser	Glu	Met	Val	Leu	Ala	Asp
				725					730					735	
Asp	Asn	Phe	Ser	Thr	Ile	Val	Ala	Ala	Val	Glu	Glu	Gly	Arg	Ala	Ile
			740					745					750		
Tyr	Asn	Asn	Met	Lys	Gln	Phe	Ile	Arg	Tyr	Leu	Ile	Ser	Ser	Asn	Val
		755					760					765			
Gly	Glu	Val	Val	Cys	Ile	Phe	Leu	Thr	Ala	Ala	Leu	Gly	Phe	Pro	Glu
	770					775					780				

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Ala 785	Leu	Ile	Pro	Val	Gln 790	Leu	Leu	Trp	Val	Asn 795	Leu	Val	Thr	Asp	Gly 800
Leu	Pro	Ala	Thr	Ala 805	Leu	Gly	Phe	Asn	Pro 810	Pro	Asp	Leu	Asp	Ile	Met 815
Asn	Lys	Pro	Pro 820	Arg	Asn	Pro	Lys	Glu 825	Pro	Leu	Ile	Ser	Gly 830	Trp	Leu
Phe	Phe	Arg 835	Tyr	Leu	Ala	Ile	Gly 840	Cys	Tyr	Val	Gly	Ala 845	Ala	Thr	Val
Gly 850	Ala	Ala	Ala	Trp	Trp	Phe 855	Ile	Ala	Ala	Asp	Gly 860	Gly	Pro	Arg	Val
Ser 865	Phe	Tyr	Gln	Leu	Ser 870	His	Phe	Leu	Gln	Cys 875	Lys	Glu	Asp	Asn	Pro 880
Asp	Phe	Glu	Gly	Val 885	Asp	Cys	Ala	Ile	Phe 890	Glu	Ser	Pro	Tyr	Pro 895	Met
Thr	Met	Ala	Leu	Ser 900	Val	Leu	Val	Thr 905	Ile	Glu	Met	Cys	Asn 910	Ala	Leu
Asn	Ser	Leu 915	Ser	Glu	Asn	Gln	Ser 920	Leu	Leu	Arg	Met	Pro 925	Pro	Trp	Glu
Asn	Ile 930	Trp	Leu	Val	Gly	Ser 935	Ile	Cys	Leu	Ser	Met 940	Ser	Leu	His	Phe
Leu 945	Ile	Leu	Tyr	Val	Glu 950	Pro	Leu	Pro	Leu	Ile 955	Phe	Gln	Ile	Thr	Pro 960
Leu	Asn	Val	Thr	Gln 965	Trp	Leu	Met	Val	Leu 970	Lys	Ile	Ser	Leu	Pro 975	Val
Ile	Leu	Met	Asp 980	Glu	Thr	Leu	Lys	Phe 985	Val	Ala	Arg	Asn	Tyr 990	Leu	Glu
Pro	Gly	Lys 995	Glu	Cys	Val	Gln	Pro 1000	Ala	Pro	Gln	Ser	Cys 1005	Ser	Leu	Trp
Ala 1010	Cys	Thr	Glu	Gly	Val	Ser 1015	Trp	Pro	Phe	Val	Leu 1020	Leu	Ile	Val	Pro
Leu 1025	Val	Met	Trp	Val	Tyr 1030	Ser	Thr	Asp	Thr	Asn 1035	Phe	Ser	Asp	Leu	Leu 1040
Trp	Ser														